THE ARCHITECT & BUILDING NEWS

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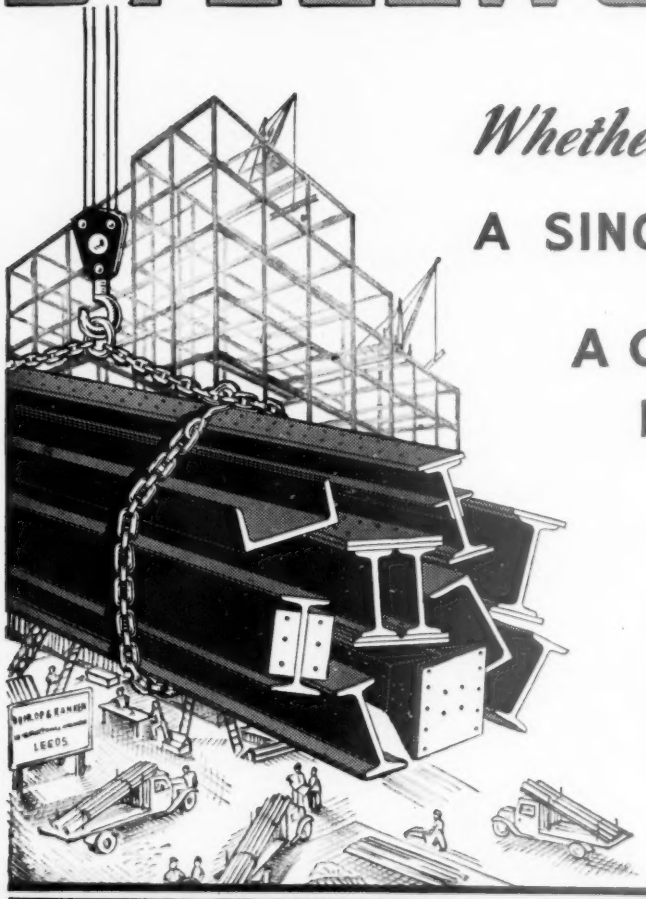
- SKYSCRAPER PROJECT FOR TOULON

SEPTEMBER 27, 1951 · VOL. 200 · NO. 4319 · ONE SHILLING WEEKLY

STEELWORK



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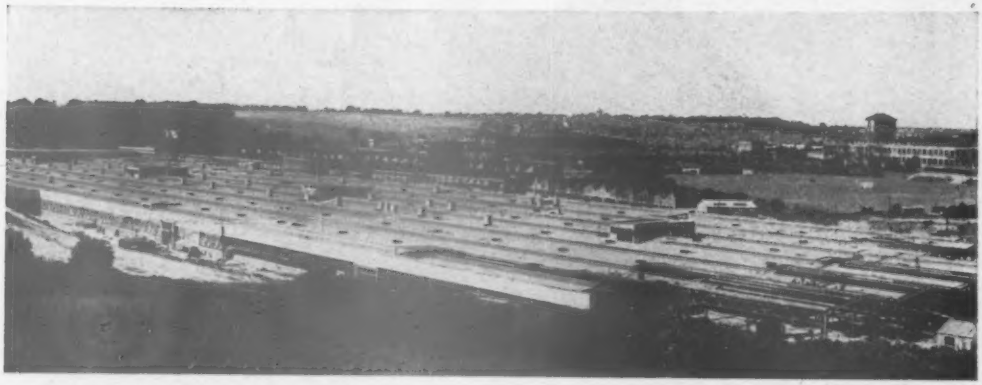

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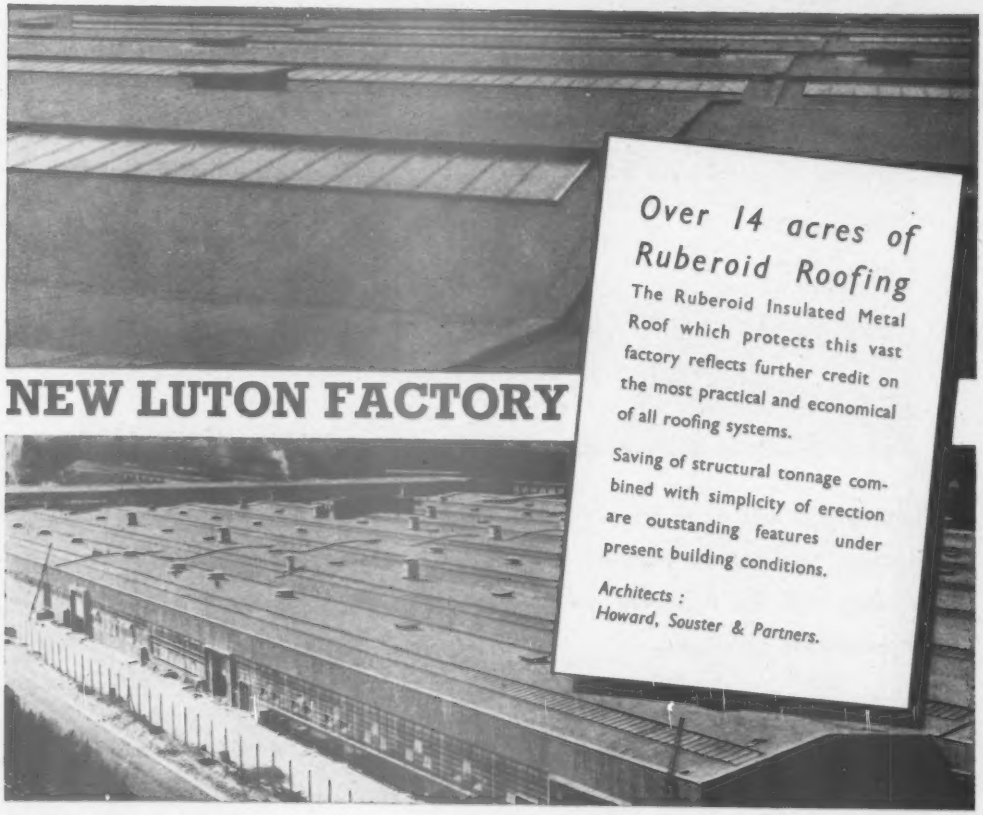

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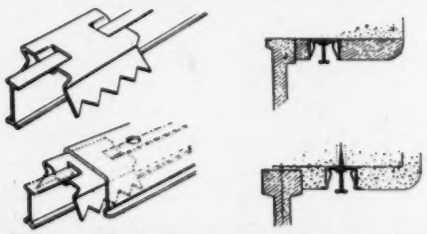

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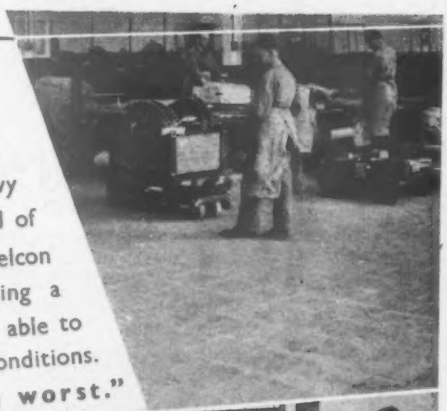

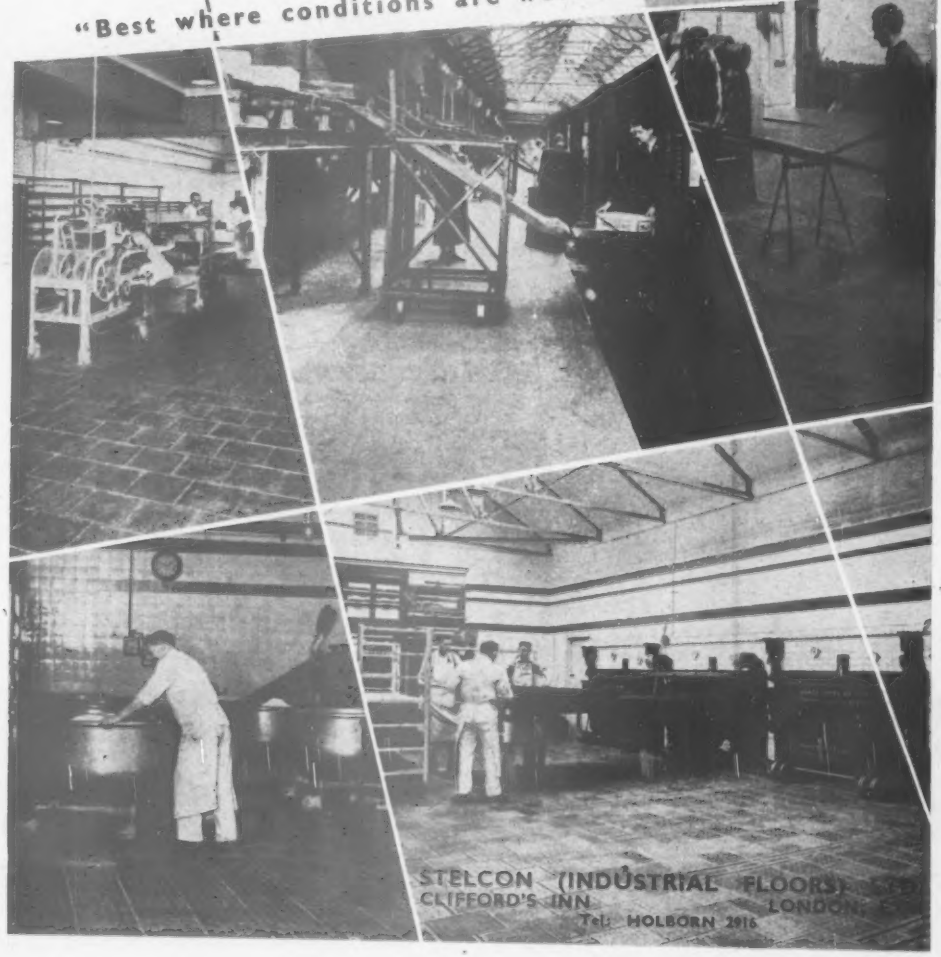

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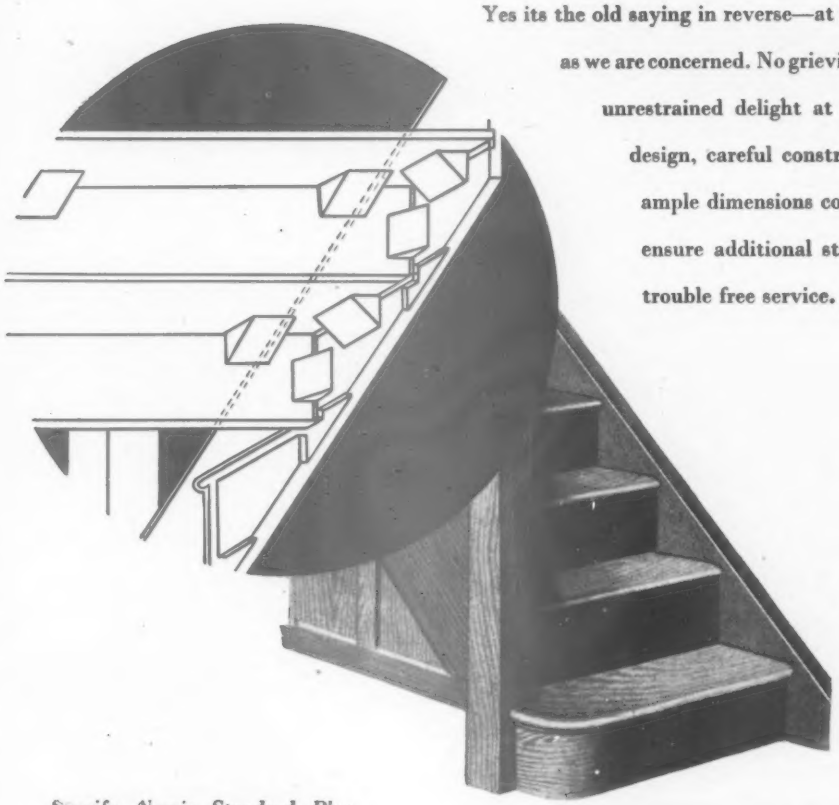

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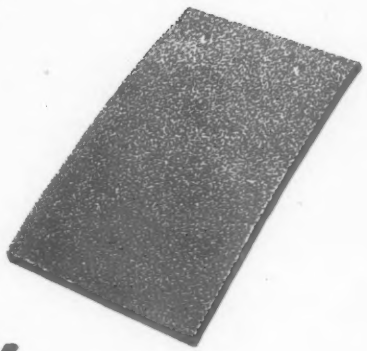

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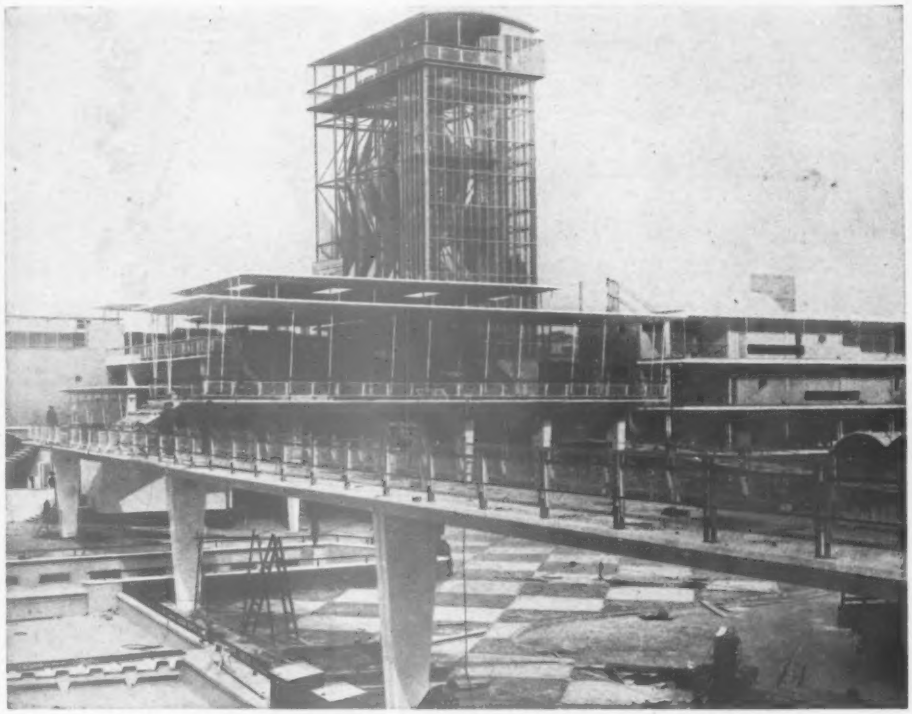

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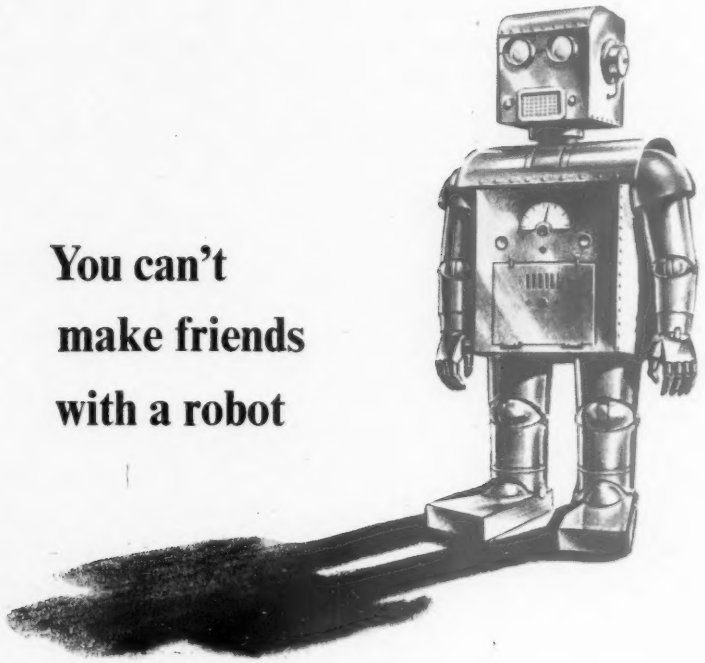

SCIENTISTS have invented highly ingenious *Mechanical men* which can work out sums, cross a floor without bumping into furniture and answer questions almost as knowledgeably as Professor Brogan. Nevertheless, most of us would rather have real human beings as companions in our daily lives.

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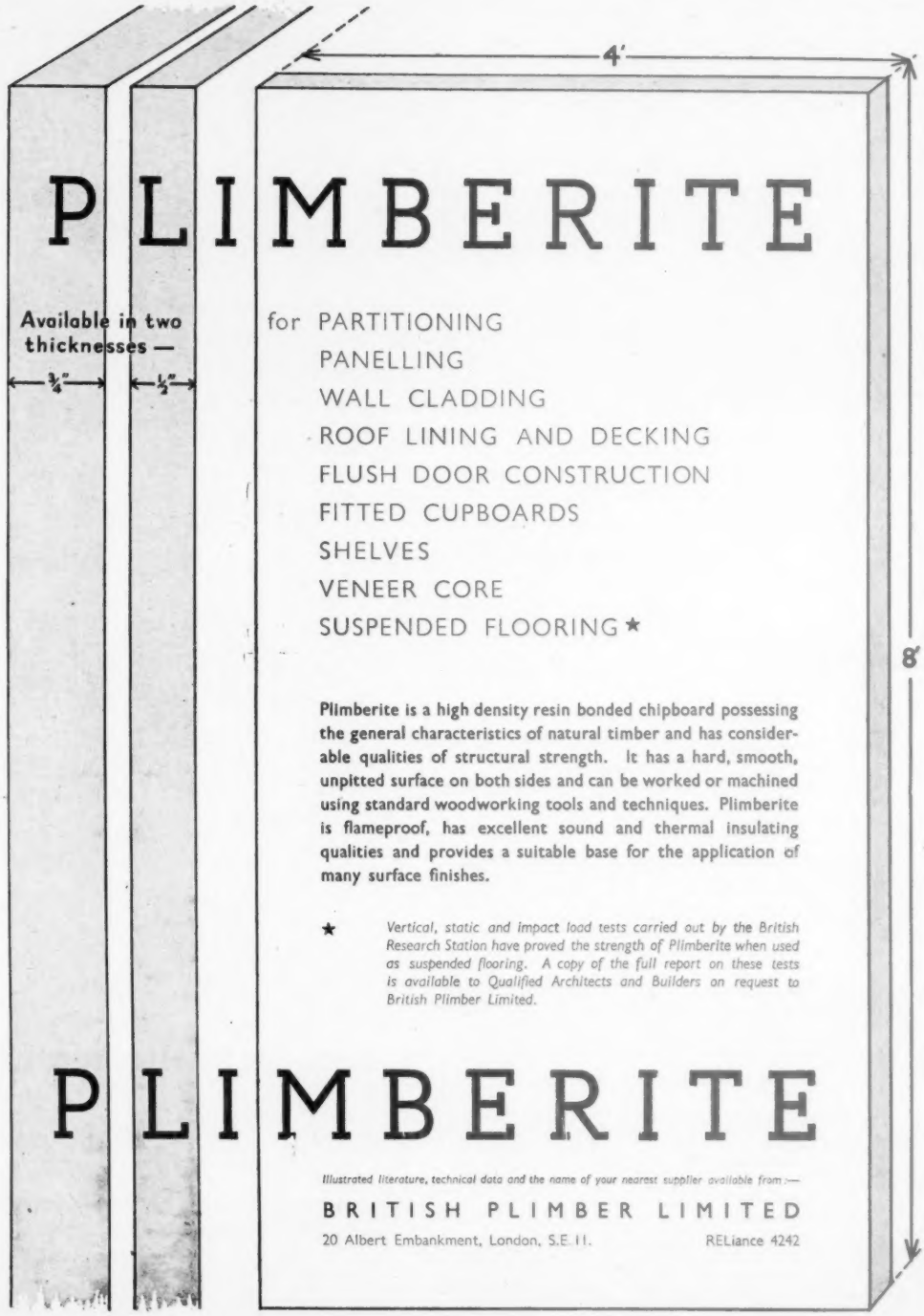

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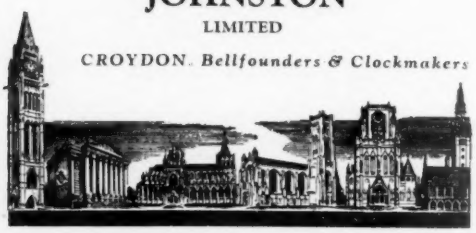

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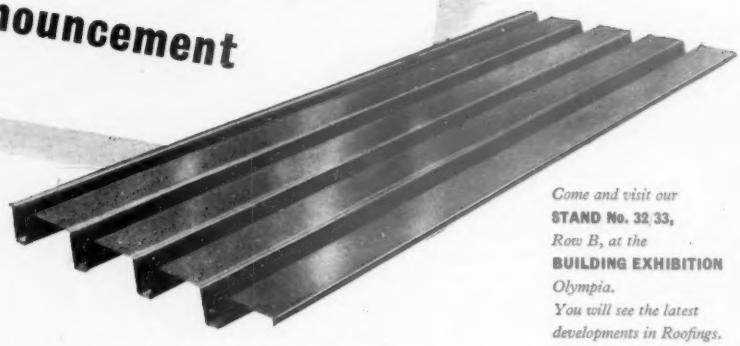

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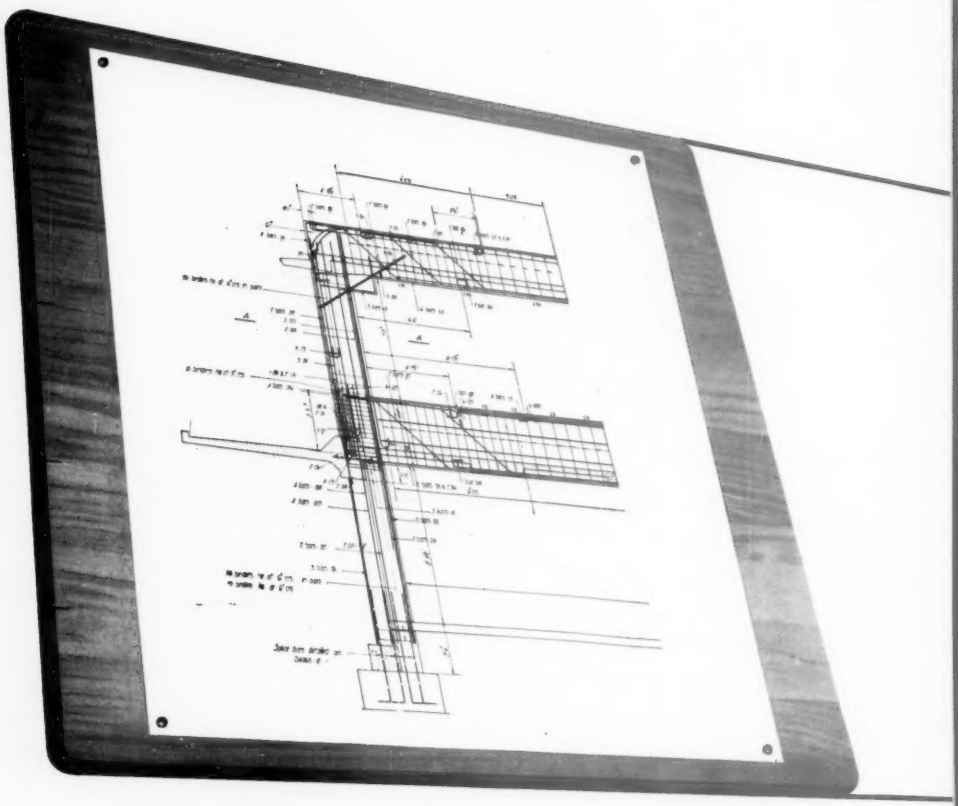

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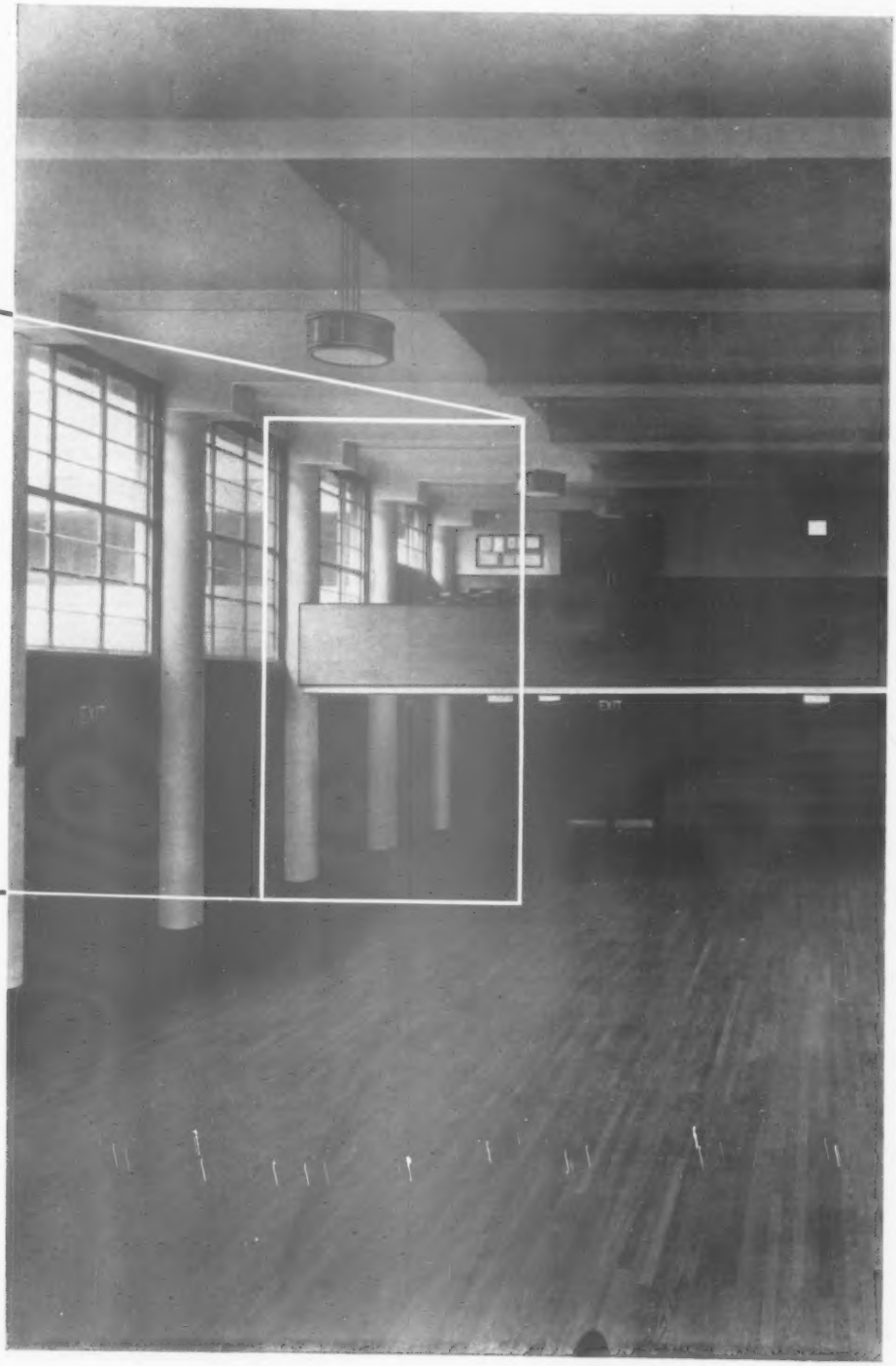

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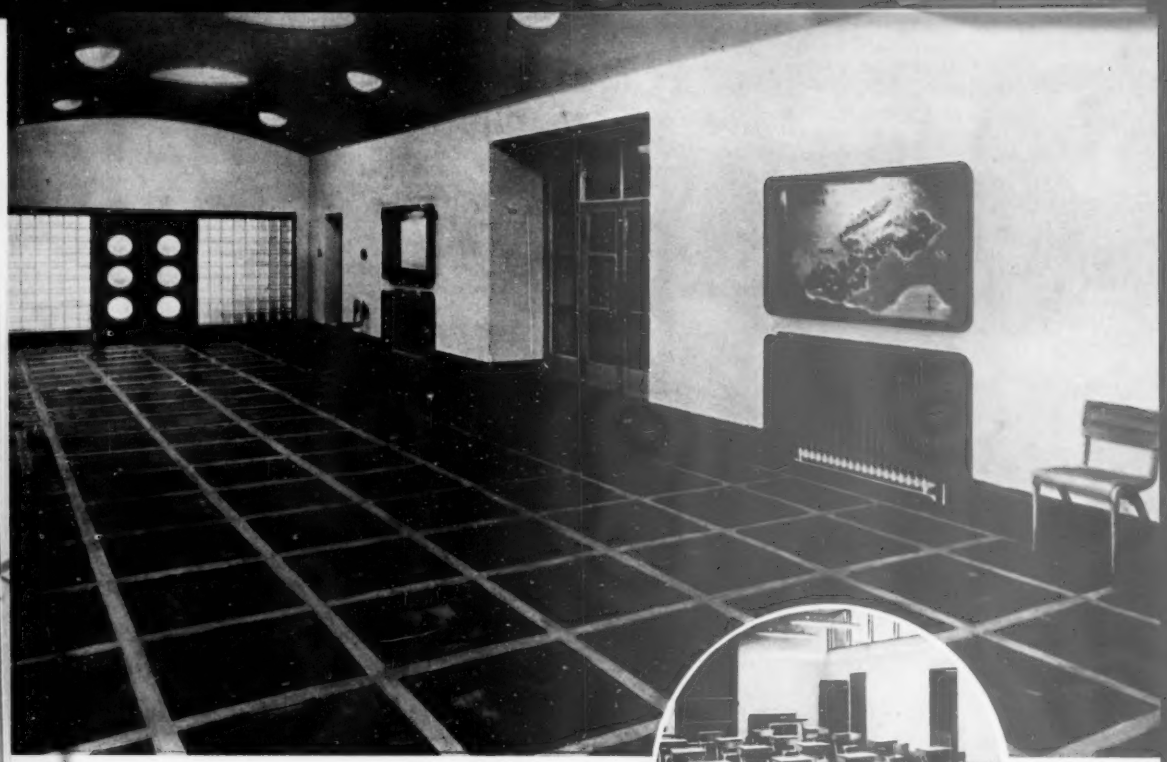

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adds much to the interior design for the tiles combine, as always, good appearance with exceptional durability and true economy

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THE ARCHITECT & BUILDING NEWS

September 27, 1951

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SUMMING-UP THE RESEARCH CONGRESS

IN our leader of September 13 we tried to indicate what might be termed the essential background spirit required to vivify the Building Research Congress, which closed a week ago, if its deliberations were to be successful and contributive to solutions of everyday problems.

Until the last day, in spite of gleams of real feeling about the relationships of science to the humanities which sometimes shone through the proceedings, we felt that our appeal to the Congress to be scientific about its attitude of mind to the industry and to designers was not far wrong. But in that final session our points were strengthened and expanded by the address from the Secretary of the Department of Scientific and Industrial Research, Sir Ben Lockspeiser.

The industry, architects, scientists and craftsmen alike should be grateful for his balanced words, with which, however, there was no holding of the punch. So often has it been asked by those who, being architects or clients, tied to axes to grind or with rows to hoe, what is the cause of the inefficiency of the building industry. Why does building cost too much and what is being done about it? The Girdwood Reports gave a lot of figures but showed very few basic causes; the Simon Report was too searching for many people and has, perhaps for that reason, stayed very much in its pigeon-hole; its points were again stressed by Sir Ben, together with others, very similar, from the Reports of the Working Party and the Productivity Team. It is not that the problems and causes have not been summarized in greater or less detail already, but that somehow the moment for bringing them "home" had not arrived. Has it now—through the words of a "neutral," the Secretary of the D.S.I.R.?

When he tells us that it is the structure of the industry that is the cause of its inefficiency and gives reasons for insisting that it should be reorganized, with hints as to how it could be done and yet, in tracing causes and effects, suggests that the building industry is unwilling or unable to learn, we feel that, as it is a scientist who is talking, the points are made in an analytical and unbiased way. In addition, Sir Ben showed that he was as much concerned with the effects of imagination and the views of the designer and artist as with the shortcomings of the industry or the inhuman isolation of scientific jargon and the difficulties that beset the application of the findings of laboratories. Therefore we say these are balanced words which all sides should study with common sense and tolerant approach. As Sir Ben stressed, it is those who have some understanding of all the factors of a problem that are likely to be sufficiently imaginative and alive to design the best, not the specialists who look after only one or two isolated trees in the tangled wood of production.

When the speaker also asserted that it was only the artist who could control the machine, we could only applaud. "*We may deplore the architect who frowns on science, but it is,*" said Sir Ben, "*the clever architect devoid of artistic sense who frightens me. The best in design comes as much from vision and imagination as from calculated thought . . .*" This is the balanced view which is so necessary to keep architecture and building on any sort of progressive development.

It is for the reasons outlined here that we think Sir Ben Lockspeiser's remarks should be taken to heart by all parties to the contract of building in this country. It is not just an attack on the building industry and if the reaction is so to regard it and to ignore its unanswerable basis of fair analysis, then the building industry will brand itself as more reactionary than many now think it is.

F

Higher Technological Education

IN this same week the Ministry of Education has taken in hand—albeit a little gently and tentatively—the extension of technical Education. The White Paper, with the above title (Cmd. 8357) naturally has some relation to an expansion of the building industry. But while the latter can be tackled now, the expansion of general technical education must be a long-term policy.

Like all White Papers it is put out for discussion by all concerned; it is based on the Report of the National Advisory Council on Education for Industry and Commerce (1950)—and although it does not go much further than that report, it provides the first step towards its implementation.

The main proposal to set up a College of Technologists to govern courses of study and to give awards and degrees, will be examined by the Universities and many professional bodies in considerable detail; in fact, it is a little difficult to prognosticate reactions.

The main drag on any extension of higher technical education, whether by central or local authorities, is the present limit placed upon the capital expenditure that may be involved and upon this question the White Paper is reticent, being concerned at the moment with educational policy and changes rather than with detailed ways and means.

To link the two subjects of our leader more directly: the need for increased technology in the higher grades of the building industry is an obvious one; so the sooner the policy of educational expansion can be thrashed out the better will be the prospects for architecture and building.

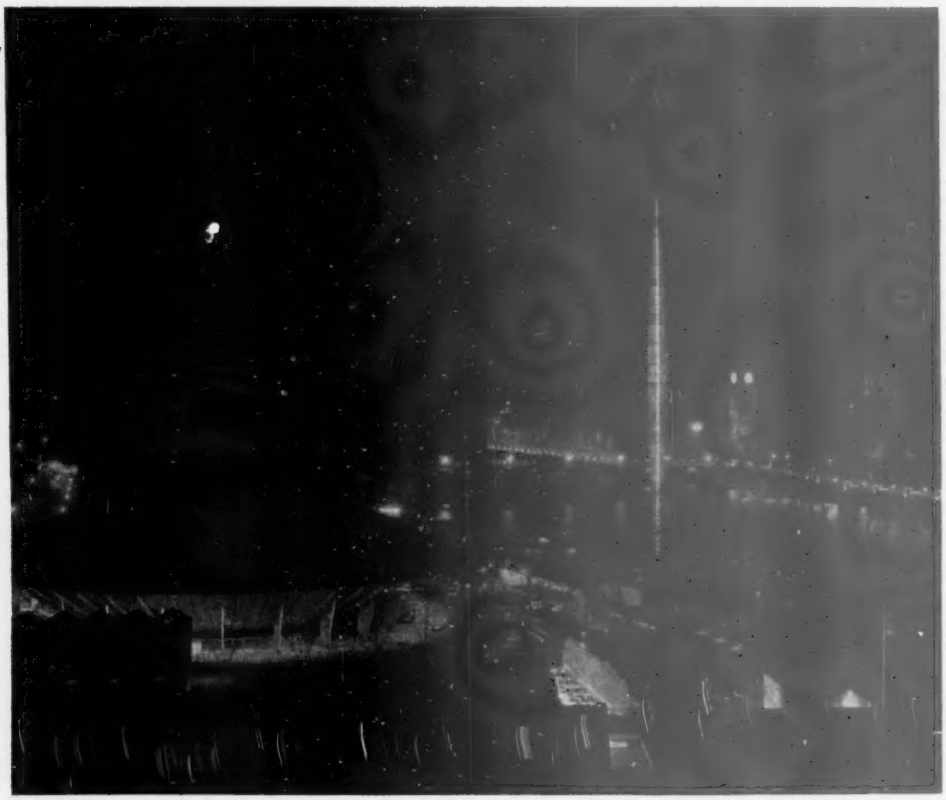


photo: David Moore.

Farewell to the South Bank Exhibition. One last picture from the top of the shot tower before the lights go out.

EVENTS AND COMMENTS

DESIGN CONGRESS

The Design Congress sponsored by the Council of Industrial Design and the Royal College of Art and held last week appears to have been a model of its kind. To begin with it only lasted two days and sessions were kept short and varied. Plenty of time was given for discussion of the papers. The programme included a slap-up banquet at the Mansion House and a party at the R.C.A. By all accounts there were some pretty poor speeches at the Mansion House. The R.C.A. party has been described to me by several people as the best for many a long day.

STREET FURNITURE

Lord Latham, chairman of the London Transport Executive, read a paper at the Congress and had some hard things to say about our street furniture—one daily paper thought that he had coined this phrase. The *News Chronicle* thereupon sent a reporter and a photographer to look at some of London's street furniture. Between them they produced an article headed "Camels, Snakes and Fish are in London's Furniture." I fear that they missed the point of Lord Latham's remarks. The Festival signposting campaign may have made London clearer to visitors but it has added more clutter to the urban scene. It would be nice to think that there was any chance of clearing up the streets. I am sure that no one would miss the Belisha beacons if they were all removed overnight. The shiny studs or the whitened strips are to-day the mark of the pedestrian crossing. Away with those orange absurdities! The Festival has produced a considerable quantity of good street furniture and there is now no excuse for horrors like those fluorescent-tube-bearing standards in the Brompton Road. The fairly new gas lanterns on the east carriageway or Hyde Park may be extremely efficient but they too are not very beautiful. It is high time that the G.P.O. changed the design of its telephone box. If it does so let us hope that it will produce something which can stand in its own grounds, be semi-detached, or one of a row without looking ridiculous, and wasting materials.

The Hon. Josiah Wedgwood also read a paper at the Congress, he described how his company combines the maintenance of sales with good design. He said that a pattern was not likely to have good sales for one or more generations without possessing substantial æsthetic and functional merits and satisfying some permanent standards of design. At first sight this seemed to me a pretty sweeping statement but after some thought I am bound to admit that I cannot think of any manufactured article which disproves it. Mr. Wedgwood went on to say that æsthetic innovations usually started with a small market and never perhaps reached a large one and that they were certainly less profitable in the short run than conventional variations on old themes. He considered, however, that to build up a long-term reputation some effort must be put into designing and producing for the minority who represented progress in thought and art, and that part of the cost of this should be considered as prestige advertising. This seems to be to be a sensible view of the problem of selling good design. Too often one hears the extreme views either of hard-boiled philistine businessmen or completely unpractical lovers of contemporary design. There is no short cut to the universal acceptance of good design. I believe that we shall see no general demand for well-designed goods until children now attending our new schools are grown up and even then it will only come gradually. The American view of all this is rather different. In the U.S., it is said, Industrial Design is an important profession recognised by Big Business. The Industrial Designer is called in to ensure the mass appeal of new projects. The Industrial Designer's aid, we are told, enables the American manufacturer to go on increasing his markets as he grows into a more and more formidable competitor for export sales. The dollar grin on the faces of U.S. motor cars underlines this point. The Studio is publishing a book called "American Industrial Design" and it will be most interesting to compare it with the latest edition of the S.I.A.'s "Designers in Britain."

ANOTHER A.A. SYMPOSIUM

The Symposium on Hospital planning held at the A.A. in December last was a considerable success. It has now been decided to hold another, this time on the planning of Colleges for further education. The symposium will be held on November 14th from 9.30 to 6. Although the detailed programme has not yet been published the A.A. can be relied upon to produce the best available speakers on the subject both from among educationalists and architects. The previous symposium was open to members only but this time members wishing to attend may take one non-member guest. The fee is one guinea for each member and each guest. If you are intending to be there you should at once write to the Secretary of the A.A. enclosing your guinea or guineas.

THE END OF THE FESTIVAL

Although the Festival of Britain has been a nation-wide event in which thousands of people have taken an active part, for many of us it has consisted almost entirely of the South Bank Exhibition and the Festival Gardens. The prize marrow at the village festival flower show may be talked about in the pub for a generation but we shall better remember and regret the passing of the Regatta restaurant, the Chicheley Street Entrance, the little boats on the waterway, and the flames and spray of the fountains.

Millions have enjoyed all this but there are, of course, thousands who will boast that they never went there, indeed I know one such person who is, I suspect, deliberately staying away so as to be able to make this particular boast. He is a silly fellow.

It is indeed sad, no, it is maddening, that all these gay and lovely buildings and all their attendant nonsense are to be pulled down. I am not entirely without hope for I hear that last minute meetings at the highest level are being held to try to save something from the ruins.

I was luckily able to inspect one of the unpublic buildings last week when the designers, the Architects Co-operative Partnership were "at Home" in the Royal Pavilion. It is charming and far too good to throw away. There is, I believe, an outside chance that it may be erected elsewhere.

The closing fixtures for the South Bank have now been announced. There will be dancing on Saturday in various parts from 7 until 11.45 and applications have been made for licences to serve drinks until 11.30—it is typical of our fantastic licensing laws that no one yet knows whether these applications will be granted. On Sunday, the last day, there will be an afternoon service in the Festival Hall with an address by the Archbishop of Canterbury. Retreat and Tattoo will be beaten by the massed bands and drums and pipes of the Brigade of Guards and there will be a royal broadcast. In the best Wembley tradition there will be Community Singing and I am prepared to bet that it will include "Abide With Me." The exhibition will close at 10.30 p.m. And will any of the thousands shed a tear for the passing of this splendid and delightful spot of gaiety on the face of dirty old London? I know one who will.

If you are collecting publications on the Festival may I recommend the Festival edition of *Concrete Quarterly*, published by the Cement and Concrete Association. It contains several new photographs and some good descriptions of various structures in which concrete was used.

NEW WAR OFFICE SUPERINTENDING ARCHITECT

The announcement of the appointment of Mr. Charles A. Richards as Superintending Architect to the War Office appeared last week with his photograph. Mr. Richards, who is 41, was at the A.A. school and before the war worked for six years in the office of Mr. Kenneth M. B. Cross, who specialized in the design of swimming baths. I first met Mr. Richards when he was, as a civilian, Assistant Garrison Engineer, Landguard, at Felixstowe. The Garrison Engineer was Mr. Stanley Roff Marsh, of Chelmsford, who was also an old A.A. boy. These two ran a pleasant architectural oasis in the arid waste of R.E. works at this time and I am afraid that I made more visits to their office in Landguard Fort than were absolutely necessary. Later both were converted into soldiers and after a spell as G.E. Calcutta, Mr. Richards became an engineer staff officer first at H.Q. XIV Army, and then at Alfsea Headquarters with the rank of Lieutenant-Colonel. He finished the war in Germany. Since the war he has been working with Mr. Arthur S. Ash, F.R.I.B.A., mainly on large office buildings for government occupation.

I hope that Mr. Richards is a reader of this column and that he has seen my various remarks about army buildings, both permanent and temporary. My immediate interest is in Teritorial Drill Halls, the basic design of which, as laid down by the War Office, does not seem to have changed since the T.A. first began. I realize that it is not only the War Office which is responsible for the lack of progress. Many County T.A. Associations are controlled by men who are too old for the job and who see no reason for deviating from the type of drill hall which they used as young regimental officers forty years ago.

ABNER

NEWS OF THE WEEK

New N.T. Acquisitions

The National Trust announces the gift from Commander and Mrs. Walter Raleigh Gilbert of Compton Castle, near Torquay. This romantic, fortified manor house was built by the Gilbert family at three different periods—1320, 1440 and 1520. It was in their possession until 1800, and the donor bought is back in 1930.

The plan of the house is H-shaped, consisting of two high parallel wings joined by a Hall, the body of which has disappeared. Each wing had three watch towers, and the whole is surrounded by a high defensive wall in which are two portcullis entrances.

Two hundred and thirty acres of farmland, surrounding the Castle, are included in the gift which has been made with the aid of a most generous grant from the Pilgrim Trust.

The exterior and courtyard of Compton Castle will be open to the public at the following times: 10-12 and 2-6 (or dusk if earlier) on Wednesdays, Thursdays and Saturdays throughout the year. Admission 1s, children and parties of 20 or more, 6d.

The Trust has also acquired Castlecoole, Fermanagh, through a grant made by the Ministry of Finance, Northern Ireland, from the Ulster Land Fund, together with 70 acres of land.

Designed by James Wyatt for Armar Lowry-Corry, 1st Earl of Belmore, Castlecoole was finished in 1798. Built of Portland stone upon a monumental scale, it is an outstanding example of late Georgian architecture.

The house has been little altered and still contains the original interior decorations, and plaster work of great delicacy carried out by Adam's plasterer, Joseph Rose.

The Earl of Belmore, the former owner, will continue to live in the house.

There will be no public access until 1952 when a further announcement will be made.

U.N. Research on Housing

A new manual (*Directory of Building Research and Development Organisation in Europe*, 116 pp., price 5s from authorized sales agents of U.N. publications) has been prepared by the United Nations Economic Commission for Europe and published jointly by E.C.E. and the U.N. Department of Social Affairs.

The directory is designed to aid what it describes as "the radically altered task" of the building industry: that of improving techniques to provide adequate housing within a reasonable period of time.

It is intended to facilitate direct international contacts among those carrying on building research or concerned with ultilization of its results.

The publication lists 379 organizations concerned with building research and development by name, country and subject and is available in English, French, Spanish and Russian.

ANNOUNCEMENT

Messrs. A. H. Davis & Partner, Chartered Quantity Surveyors, of Newburn Chambers, 107, New Bridge Street, Newcastle-upon-Tyne, have opened a branch office at 14, Finkle Street, Kendal, Westmorland. 'Phone: Kendal 1446.

COMING EVENTS

Chartered Auctioneers' and Estate Agents' Institute.

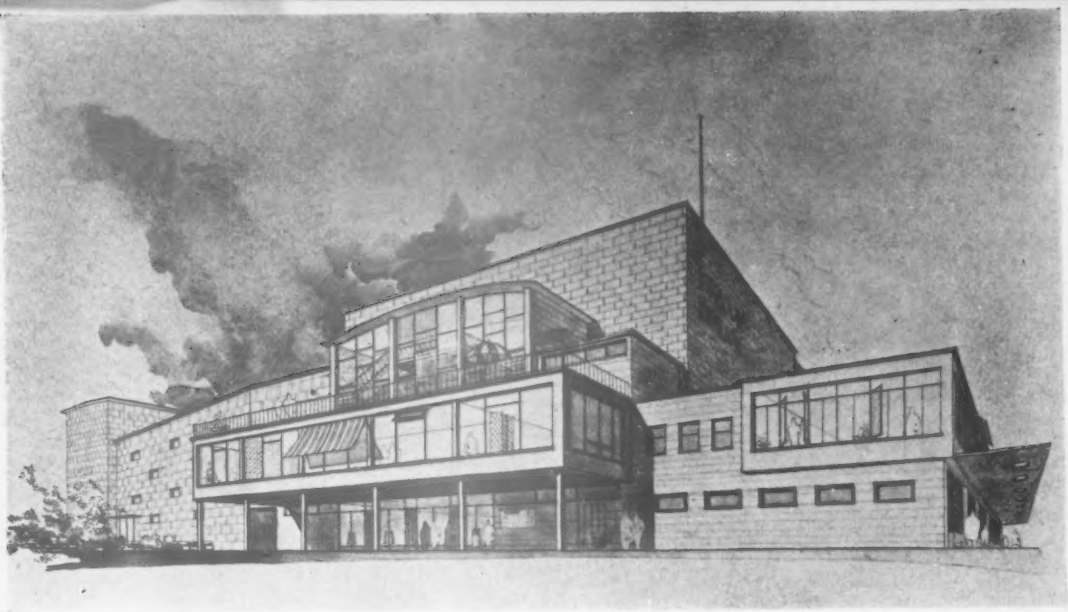
October 4th, at 6 p.m. "Dry Rot and Beetle Damage: Their Prevention and Cure," illustrated lecture by E. H. Brooke Boulton.

Students' Planning Group.

October 4th, at 6.15 p.m. "The Story of our Inland Waterways," speaker: Marie Shephard, A.I.L.A. At the Planning Centre, 28, King Street, W.C.2.

Town and Country Planning Association.

Oct. 4-5. Conference from 10.30 to 12.30 and 2.15 to 4.15 each day at County Hall, S.E.1.



DUNOON PAVILION

Competition: Winning design

IN the competition for the design of a new Pavilion and Concert Hall in Dunoon, Argyllshire, the assessor, Mr. A. Graham Henderson, P.R.I.B.A., awarded the first prize to Mr. Ninian R. J. Johnston, A.R.I.B.A., Dip. Arch. Glasgow, A.M.T.P.I. The site, that of the hall destroyed by fire last year which the new building is to replace, is a prominent one and the new pavilion has been designed to be seen by holiday makers approaching by water, against the wooded background. The plan provides for a conference hall to seat 2,000, with full-size stage and equipment, a concert hall to seat 750, a buffet restaurant for 200, a public restaurant, reception suite and a group of shops. In his report, the assessor, Mr. Graham Henderson, says :

After careful examination of all the designs I have no hesitation in selecting the design No. 6 as best meeting the requirements of the proposed building. This is a very able design and its particular features are :

(1) *It encroaches least on the Castle Gardens Area.*

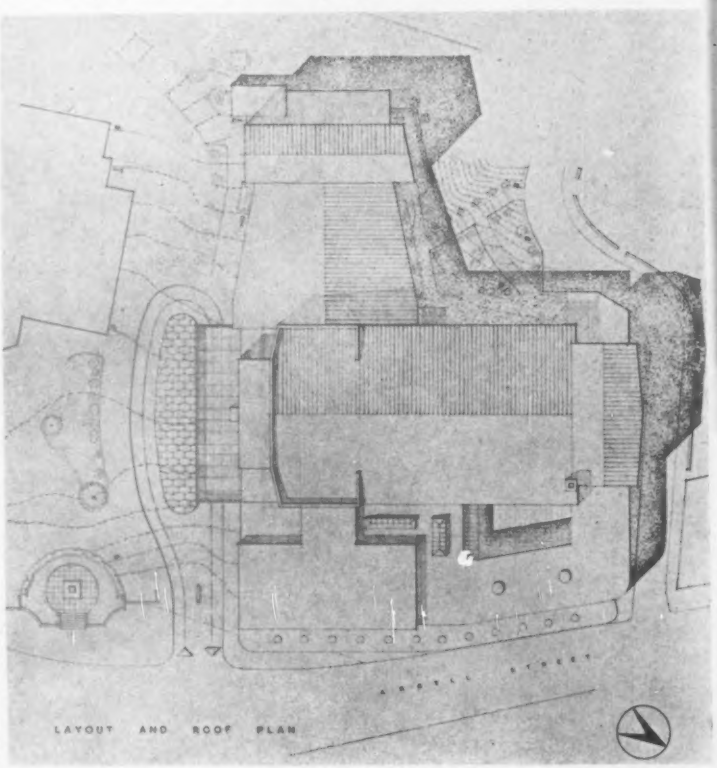
(2) *It provides easy and convenient access both for those arriving on foot and in cars. In particular, the cover provided for car entry is a good feature.*

(3) *The disposition of the three major elements of the required accommodation, namely large hall, concert hall and front buildings is such that they can be built separately although obviously the large hall and front buildings should, if possible, be built together.*

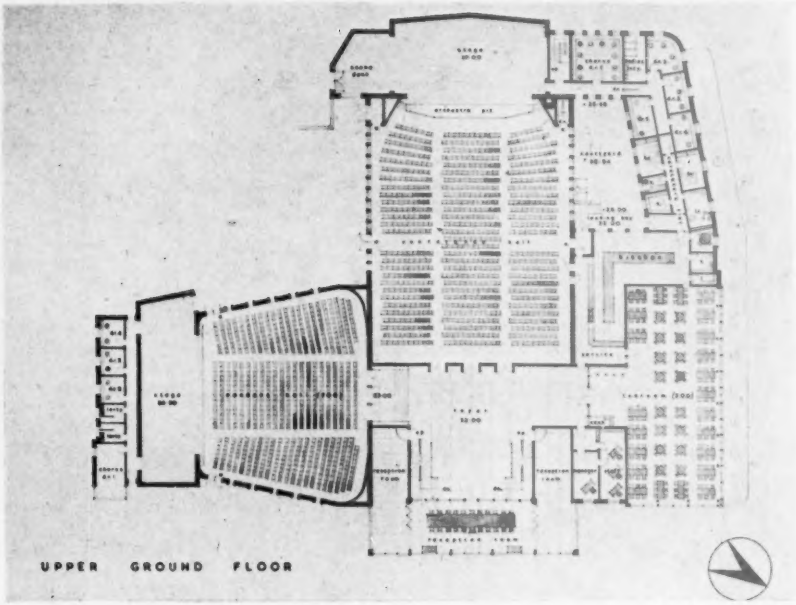
(4) *Its general architectural treatment is suitable for, and suggestive of, the uses to which the buildings are to be devoted.*

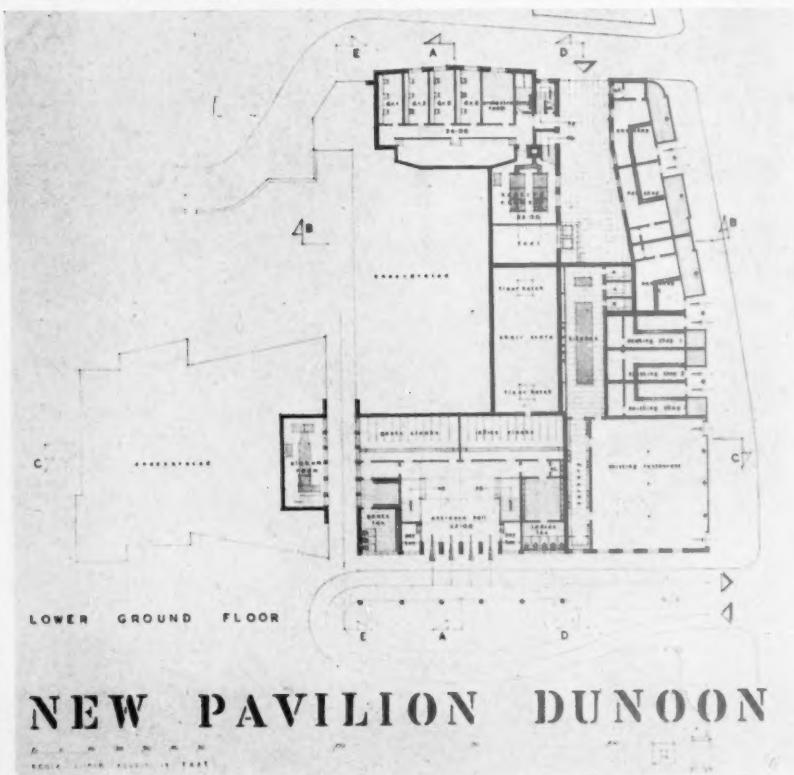
(5) *The spacious nature of the main crush hall which leads to the three main apartments to be used by the public and the direct and dignified approach to these apartments.*

There are minor defects in this design—in particular, the arrangement of gallery in the main hall which is placed wholly at one end.

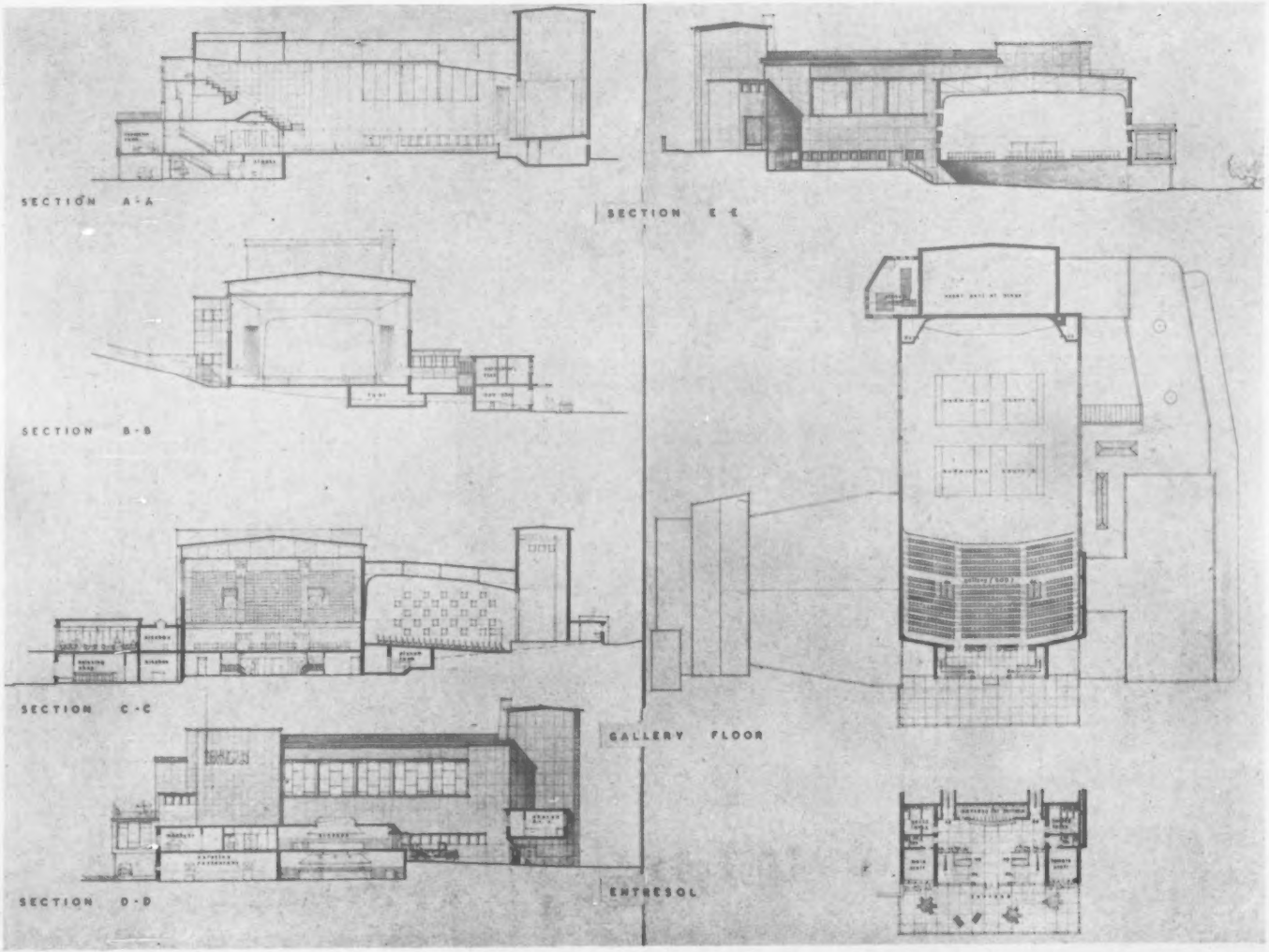


LAYOUT AND ROOF PLAN





NEW PAVILION DUNOON



DUNOON PAVILION COMPETITION: WINNING DESIGN BY NINIAN JOHNSTON

Courtyard. The Church is on the left.

TRINITY CHURCH AND HALLS POPLAR

architects:
CECIL C. HANDISYDE
D. ROGERS STARK, AA.R.I.B.A.
[Assistant architect:
R. V. WARD, A.R.I.B.A.

Programme

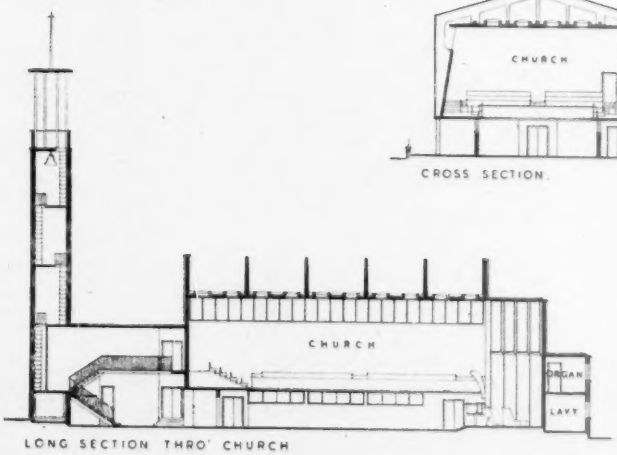
Trinity Congregational Church is a very live organization in Poplar. In addition to the Church there is a large and flourishing range of community activities including a Grandfather's Club, Women's Club, Scouts, Guides, Clothing and Toy distribution and a meals service, etc.

The accommodation required was: (1) A Church to seat a total of about 400 but arranged so that the normal smaller congregation would feel comfortable. The Church to have a light and airy feeling. (2) An Assembly Hall to seat approximately 400 with Stage in addition. The Hall to be useable for Badminton. (3) A group of Clubrooms and Offices. (4) A Caretaker's Flat.

Site

The site, which is on the North side of East India Dock Road, is on a corner of the "Live Architecture" section of the Festival of Britain and forms part of the Lansbury neighbourhood. The main road is to be widened

CROSS SECTION



LONG SECTION THRO' CHURCH

consultants:
structural:
Felix Samuely, A.M.I.C.E.
heating:
John Porges, M.I.Mech.E.

so that the frontage line of the site had to be set back.

On the West side of the site a small permanent public open space with pond, trees, grass and planting is being formed by the London County Council. The majority of the Clubrooms overlook these pleasant gardens, the remainder face East and form one side of a quiet courtyard.

Church

To meet the requirements for both small and large congregations the Church has been planned with a gallery round three sides; this gallery has been projected outwards from the lower walls of the Church instead of into and over the Ground Floor. This has been done in order to give a pleasant and compact feeling for normal congregations.

In the daylighting of the Church a light and airy feeling was asked for, but the site is rather noisy. It was therefore decided to provide most of the lighting through small dome lights in the roof. Two completely unobstructed clerestory windows run along the side walls and the top of these run right up to ceiling level. The object of these clerestory windows is to reduce any possible effect of glare from the dome lights which otherwise might seem too bright if viewed against a dark background.

The choir area of the Church is lighted by deeply louvred windows at high level which will throw light down into the choir and on the Cross and organ grille which dominate the East end. These windows will not be visible from the congregation. They are glazed with amber-coloured glass to give a sunny effect at the East end of the Church and the colour of the glass is slightly different on the North and South sides in order to give a slight directional effect to the light.

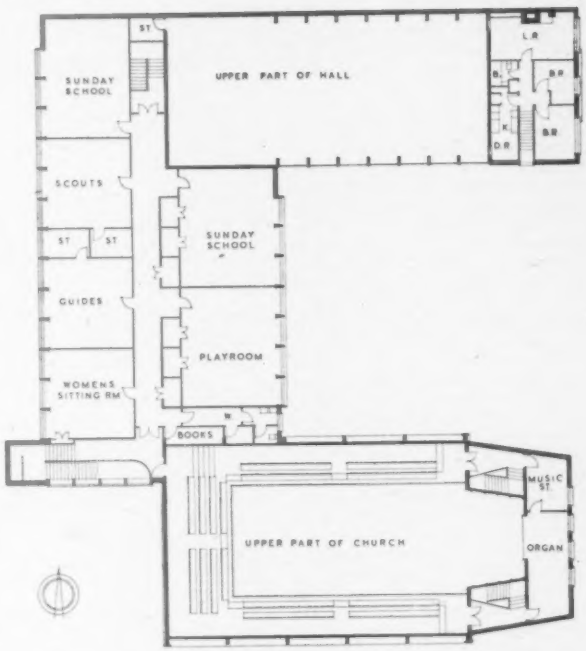
The general colouring of the Church derives its natural quality by the use of self-coloured materials. The whole of the ceiling has, however, been painted a very pale turquoise blue.

The pews and most of the furnishings are in natural oak wax polished.

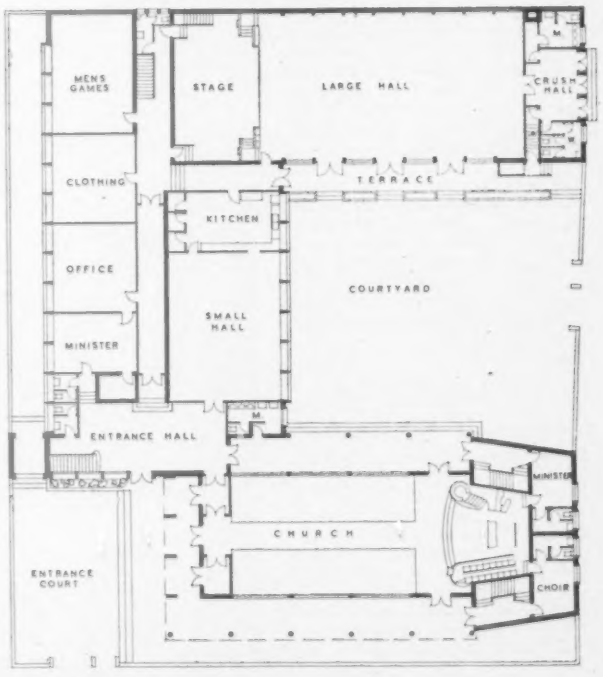
Small side windows are used in the Ground Floor of the Church to avoid any feeling of being "shut in." On the street side these small windows are double glazed in order to reduce sound transmission.

Assembly Hall

The feature of this is the large glass area giving a view into the Courtyard and the top side lights which give good lighting over the entire area. The ceiling height is generous to allow



FIRST FLOOR



GROUND FLOOR

10 0 10 20 30 40 50 60 70 80 90 100 feet

G

for badminton, etc. The North Wall of the Hall is partially covered with fibreboard fixed at varying angles so as to avoid cross sound reverberation.

Construction

Trial borings showed the soil to be very poor to a depth of at least 17 feet. In situ concrete piles were therefore used with a grid of reinforced concrete beams on top.

The general construction is in reinforced concrete. In the case of the Church and Assembly Hall the main structural members are exposed above the roof with the result that inside the ceilings are flat and unobstructed by any beams.

The construction of both the Hall and the actual Church consists of two-hinged frames, with the frames projecting visibly on the outside. In some instances, at the corners of the Hall and over the entire roof of the Church, the frames stand completely free of the actual roof covering.

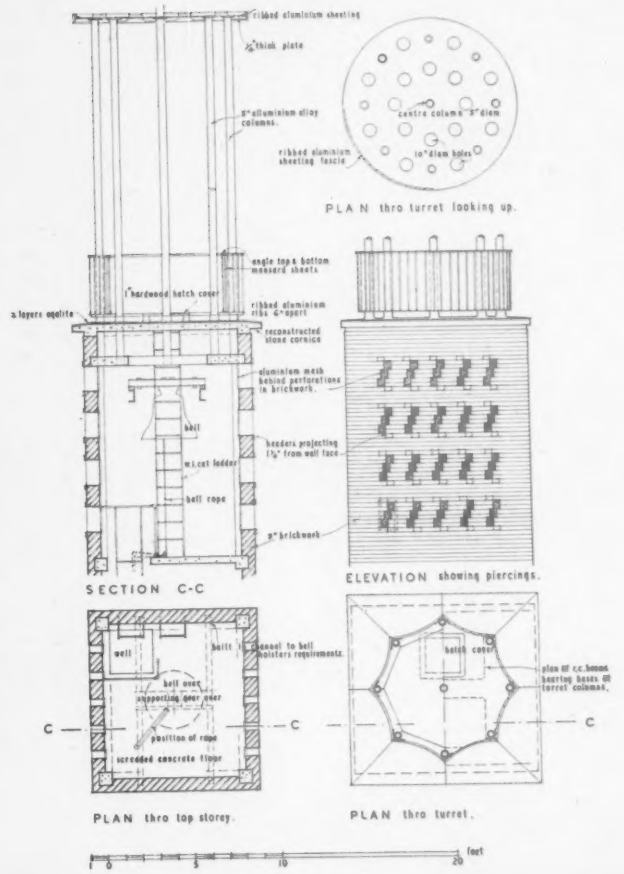
It was required to keep these frames as thin as possible, and this presented special problems when providing sideways stiffening to prevent the top chord from buckling. As can be seen from the cross section of the Church, the actual two-hinged frame starts only at gallery level and rests on top of circular columns, which form a colonnade under the gallery. These columns, of course, are not capable of taking the thrust from the frame and the actual gallery floor was used to collect the thrust from the frames and bring it to both gables of the Church, where tie-members are arranged in the walls.

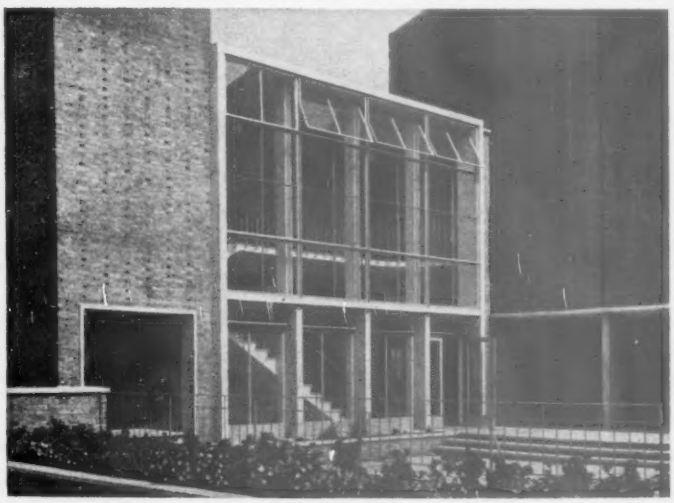
Materials

The tower and some other parts of the exterior are in London Stock brick in order to harmonize with the general scheme for the whole neighbourhood. By using a mixture of first hard stocks with 25 per cent picked dark stocks and using the darker bricks for headers in a bond of two stretchers to one header a patterned effect has been obtained which gives a slight overall texture to the brickwork. Jointing is in cement/lime mortar.

The end gable walls of the Church are of pre-cast concrete slabs faced with large pieces of crushed London Stock bricks to give a heavily textured surface. Contrasting with this is the smooth blue-grey surface of the columns which are seen at closer quarters. These are structural reinforced columns and were pre-cast and finished in the factory with the final polished terrazzo surfacing.

Similar blue-grey terrazzo is used for the pre-cast panels between ground and first floor windows of the Club-room block.





The main frames of the Church and Assembly Hall are in ordinary concrete finished by bush hammering but with a one inch clear margin left to emphasize arrises. Cable copings and certain other stone trim is in pre-cast reconstructed stone using a Portland Stone aggregate.

The exterior of the upper side walls to the Church are covered with sheet copper.

Roofs are laid flat and covered with three-layer roofing felt finished with a layer of stone chippings. A bright touch is given to the Clubroom exterior by the window mullions which are finished in a soft blue coloured tile.

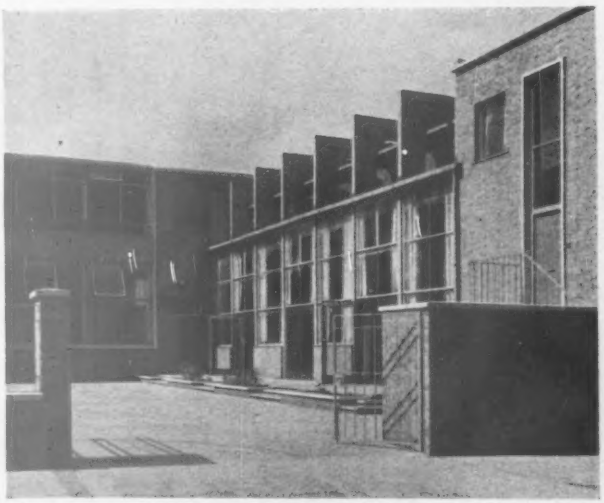
Internally the finishes are very simple. The choir floor is in Hopton Wood stone and the Assembly Hall floor in a small patterned oak block. The Kitchen has a buff coloured quarry tile and the Entrance Hall and Crush Hall floors are in pre-cast terrazzo tiles made from a Hopton Wood stone aggregate. Elsewhere most of the floors are of asphalte composition tiles, often laid in patterns of various colours. The Church gallery floor is covered with heavy linoleum.

Walls in the lower part of the Church are fair faced buff coloured sand-lime bricks. The Church gallery walls are panelled in 2ft squares of hardboard left untreated except that the West end wall is perforated to give added sound absorption. Behind the hardboard is a one-inch thickness of glass fibre to give improved heat insulation and to add to the sound absorption of the hardboard panels.

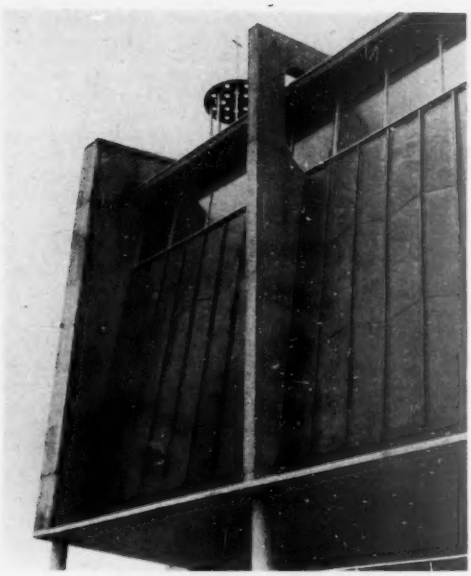
Heating

Heating is from a boiler house in a

Above, the Church and Tower from West. Left, the outside of the entrance hall and staircase. Right, another view of the courtyard with the Assembly Hall on the right.



TRINITY CHURCH
AND HALLS
POPLAR

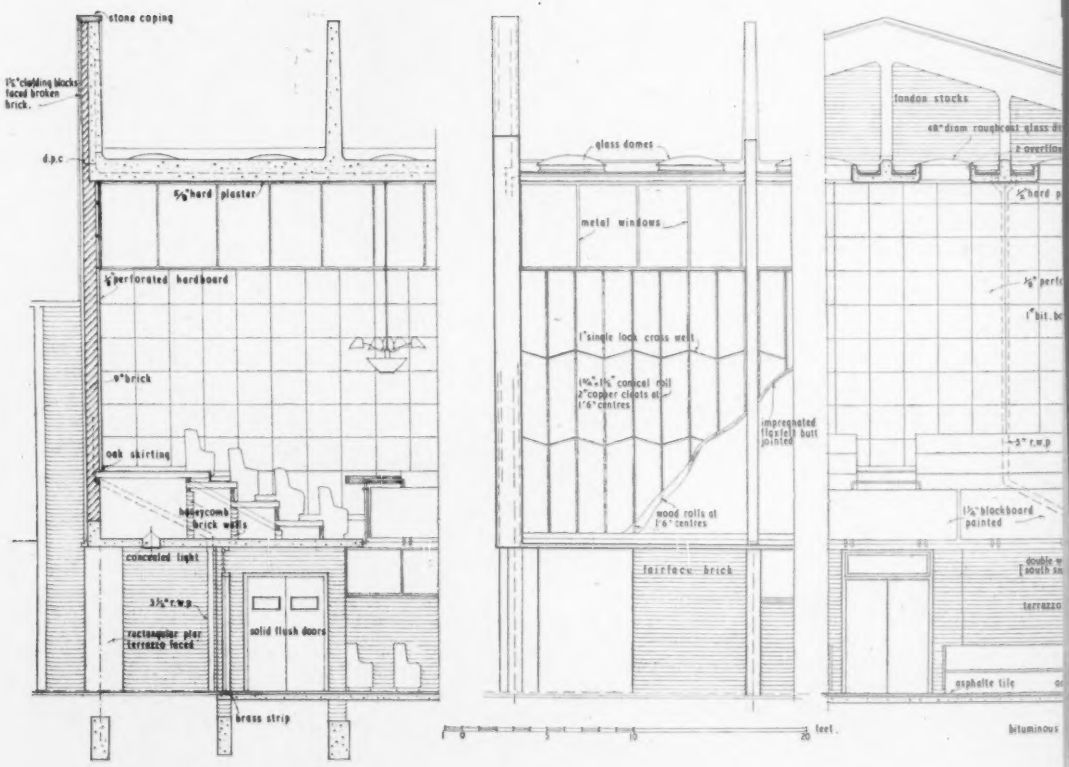


basement under the Assembly Hall Entrance. Two automatic stokers are used to fire coal burning boilers. Heating in the Church is by underfloor panels in the Ground floor and by convector radiators in the Gallery. The Clubroom is heated by underfloor panels with the addition of radiators on the East wall of the small hall. The Assembly Hall has a combination of convector radiators between the Courtyard windows with warm air heating and ventilation. Warm Air enters at high level through grilles in the sides of the stage proscenium and is extracted over the entrance doors.

Contract

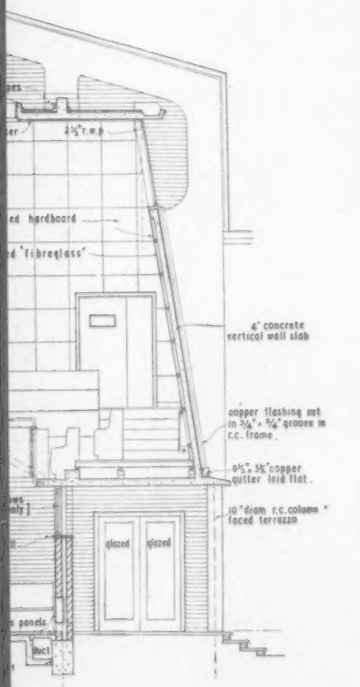
The total building time was about 16 months.

The contract was for £61,955. This included the whole of the structure finishes and equipment except the organ, church pews and furnishings, and the curtains in the Assembly Hall and Clubrooms. The cost including all piling and foundation works but based on a cube figure is 3s 9d. This cube price also includes site works of paving, boundary walls and railing.



TRINITY CHURCH AND HALLS, POPLAR

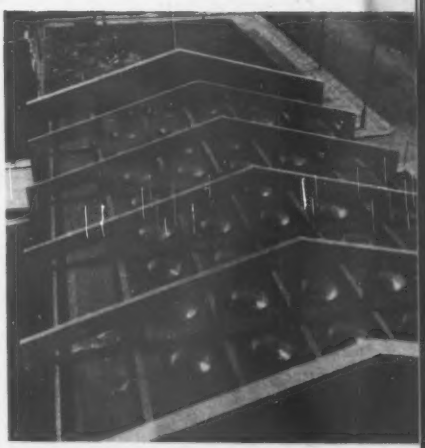
Details of the roof structure are shown below and pictured left. The exposed R.C. roof trusses have bush hammered finish. Right is pictured the Church interior with an exterior view of the roof below. Clerestory windows along the side walls are intended to reduce glare from the dome lighting.



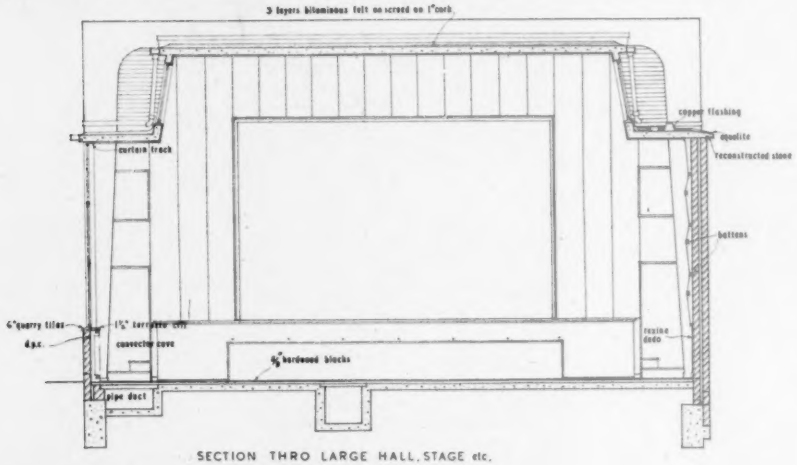
GENERAL CONTRACTORS: TERSONS, LTD.

SUB-CONTRACTORS

Aggregates: G. Wiggins, Ltd. *Artificial Stone:* Girling's Ferro-Concrete Co., Ltd. *Balustrading:* The Blatter Engineering Co., Ltd. *Bell:* Gillett & Johnston, Ltd. *Blinds:* J. Avery & Co., Ltd. *Bricks:* The London Brick Co., Ltd. (Fletton); The Stock Brick Manufacturers' Association (Stock); Uxbridge Flint Brick Co., Ltd. (Facing). *Clocks:* Gent & Co., Ltd. *Convectors:* British Trane Co., Ltd. *Cork Insulation:* Cork Insulation & Asbestos Co., Ltd. *Doors:* Joseph Sandell & Co., Ltd. *Dome Lights:* Pilkington Bros., Ltd. (Circular); T. & W. Ide, Ltd. (Rectangular). *Electrical Installation:* London Electricity Board. *Ferrocrete:* The Cement Marketing Co., Ltd. *Fire Extinguishers:* Read & Campbell, Ltd. *Floor Tiles:* Marley Tile Co., Ltd. *Flooring:* Onsite Flooring Co. *Frames:* Super Cement, Ltd. *Glazing:* Aygee, Ltd. *Glazed Tiling:* Carter & Co., Ltd.



Hand Lift: Gibbs Bros. & Lucas. *Hardboard:* C. F. Anderson & Son, Ltd. *Heating and Ventilation:* G. N. Haden & Sons, Ltd. *Ironmongery:* Rennis, Ltd. *Ironwork:* S. W. Farmer & Son, Ltd. *Joinery:* P. H. Barker & Son, Ltd. *Light Fittings:* Hume Atkins & Co., Ltd. (General); Troughton & Young, Ltd. (Church). *Lightning Conductor:* J. W. Gray & Son, Ltd. *Louvre Air Bricks:* G. A. Harvey & Co. (London), Ltd. *Organ:* J. W. Walker & Sons, Ltd. *Painting:* Perrott Grenville, Ltd. *Pews:* John Sadd & Sons, Ltd. *Piling:* Franki Compressed Pile Co., Ltd. *Plastering:* H. J. Hitchins, Ltd. *Plumbing:* Engineering Service Installations. *Precast Concrete and Granopaving:* F. Bradford & Co. *Precast Terrazzo Faced Columns:* The Liverpool Artificial Stone Co., Ltd. *Reinforcement:* Square Grip Reinforcement Co., Ltd. *Reinforcement and Fixing:* Rom River Co., Ltd. *Roofing and Tanking:* Wm. Briggs & Sons, Ltd. *Sanitary Fittings:* Dent & Hellyer, Ltd. *Scaffolding:* Scaffolding (Gt. Britain), Ltd. *Soft Furnishings:* Gerald Holtom. *Spotlights:* The General Electric Co., Ltd. *Steel Wall Panels and Floor Access Covers:* Clark Hunt & Co., Ltd. *Stone Flooring:* The Hopton Wood Stone Firms, Ltd. *Terrazzo:* Standard Pavement Co., Ltd. *Turret—Aluminium:* Structural & Mechanical Development Engineers, Ltd. *Vent Grilles:* Greenwood's & Airvac Ventilating Co., Ltd. *Wall Tiling:* Harradine Rouse & Co. *Windows—Metal:* The Crittall Manufacturing Co., Ltd.



SECTION THRO LARGE HALL, STAGE etc.

TRINITY CHURCH AND HALLS, POPLAR

Assembly Hall. *architects: Cecil C. Handisyde and D. Rogers Stark*

The Colston Hall, Bristol

architect: J. NELSON MEREDITH, F.R.I.B.A. City architect
senior assistant architect in charge: T. S. SINGER, A.R.I.B.A., A.M.T.P.I.
assistant architects: S. G. Howitt, L.R.I.B.A. & N. F. Holland, A.R.I.B.A.
consulting engineers (heating & electrical): Hoare, Lea & Partners

THE site now occupied by the Colston Hall was originally part of the Priory of the Carmelites or White Friars, which appears to have been founded in the year 1267. In July, 1538, the Priory was visited by Richard Ingworth, Bishop of Dover, the special visitor appointed to suppress all the friaries in England. This was the first house in Bristol to be given up to the King, and an inventory of the goods of the house gave their value as £8 2s 11d, plus two copper chalices which were retained by the visitor!

A few years after the suppression of the monasteries, the Corporation purchased the Friary buildings and part of the garden ground, but within a short period sold it to Thomas Chester, an alderman of the city. In 1568 the property was acquired by a John Young, who immediately set about the building of a fine mansion on the site, which was later known as the "Great House, St. Augustine's Back."

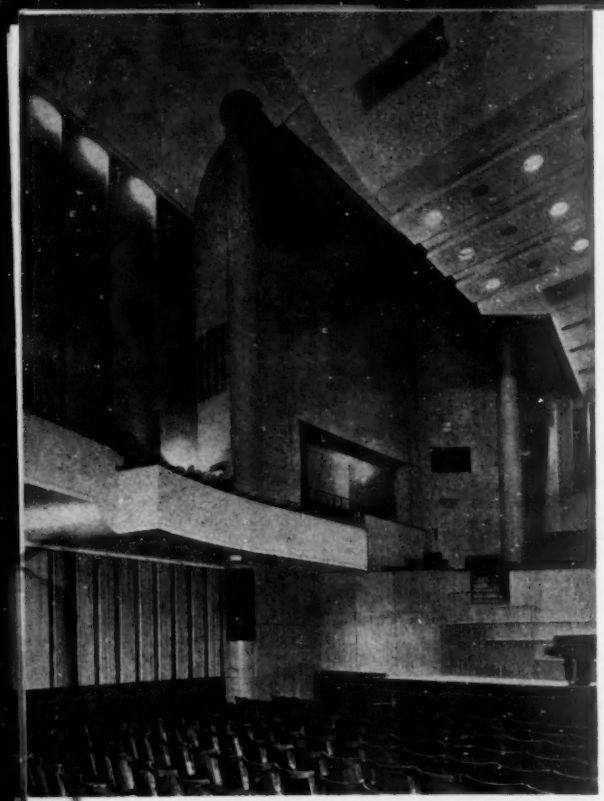
..In 1707 Edward Colston was searching for a house in which to establish a boys' school and succeeded in purchasing the Great House for the sum of £1,300. He pulled down the original mansion and rebuilt it to suit his requirements. The accommodation proving inadequate the school was removed in 1861 to the former palace of the Bishop of Gloucester and Bristol, at Stapleton.

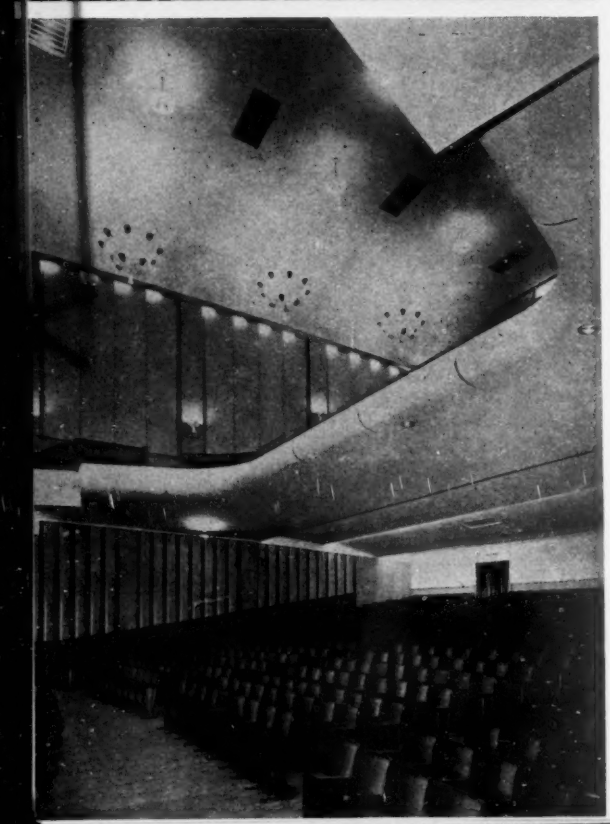
In November, 1861, the property was purchased with a view to the erection of a public hall. The Colston Hall Company was accordingly formed; arrangements were made for the erection of suitable buildings. The Colston Hall was opened to the public on September 20, 1867.

Early in the morning of September 1, 1898, a fire occurred in Messrs. Clarke's clothing factory adjoining the Hall, which spread to the Company's buildings, doing an immense amount of damage. Negotiations were at once commenced with a view to rebuilding the Hall which was later completed.

The property was acquired by the Corporation from the Colston Hall Company in November, 1919, for £65,000.

The scheme of reconstruction for the third Colston Hall to the design of C. F. W. Dening, R.W.A., F.R.I.B.A., was





approved by the Council in 1935, formally sanctioned by the Minister of Health in February, 1936, and completed in December of that year.

In the present scheme the shape of the hall has been largely determined by the acoustical requirements of a concert hall. As the auditorium is ventilated and heated by the Plenum System, all old window openings in the original walls have been blocked up and special treatment has been given to the ceiling and roof to insulate the hall from outside noises. The corridor which runs round the main hall acts as a sound buffer and gives access to all parts of the building.

Good direct sound from the orchestra to the whole of the seating area was the main object in the mind of the architect when designing the hall.

In order to avoid a large overhang of the balcony, side balconies have been introduced, giving an intimate atmosphere to a concert hall of this size.

The large areas of light chestnut panelling, rising to a height of 50 feet around the concert platform, are designed to give the required resonance, and the panelling under the side balconies has been broken up into a series of convex shapes for good diffusion of sound.

The auditorium side walls have panelling comprising vertical convex drums faced with chestnut veneer and relieved with 4in wide Mansonia strips, whilst a 3ft 6in high dado consists of Mansonia entirely. This panelling has been made removable to enable adjustments to be carried out to the acoustic properties if so desired, whilst the walls above balcony level are lined with saw-toothed "Weyroc" panels with clear polished hardwood edges in red Merenti. European oak strip floor has been chosen for the concert platform. To reduce sound absorption carpets have been omitted and soft furnishings kept to a minimum.

The large canopy (partly in fibrous plaster and partly in in-situ plaster on metal lathing) over the concert platform is intended to reflect sound to the more distant parts of the auditorium. This canopy is designed also to return a proportion of the sound on to the orchestra itself, thus enabling the performers to hear the balance between their own instruments and the orchestra as a whole.

The hall will seat 2,000 persons with room for an additional 182 in the choir seating.

The front of the auditorium floor is level and of polished strip flooring surface in Muhuhu hardwood so that the hall can be used for dancing and exhibitions. Transportable chairs can be lowered and stored in space below. A section of the stepped portion of the floor immediately behind can be removed by sliding on rollers to underside of rear steppings to extend this area when necessary.

It is intended to use the hall for boxing contests and a specially designed boxing ring has been constructed to fit partly on the concert platform and partly on the auditorium floor. Special floodlights are provided for these contests.

A soundproof room with a window overlooking the concert platform has been included for the B.B.C. Opposite is a similar observation room for electricians and control of amplifiers.

An organ chamber grille has been positioned at the back of the concert platform and has been carried out in hardwood with vertical members of Aerofoil section in Mansonia, interspaced with vertical hardwood dowel divisions painted in gold. The organ, which is being built by Messrs. Harrison and Harrison, of Durham, will be completed in 1954.

Continued on page 346

Views of the Auditorium.

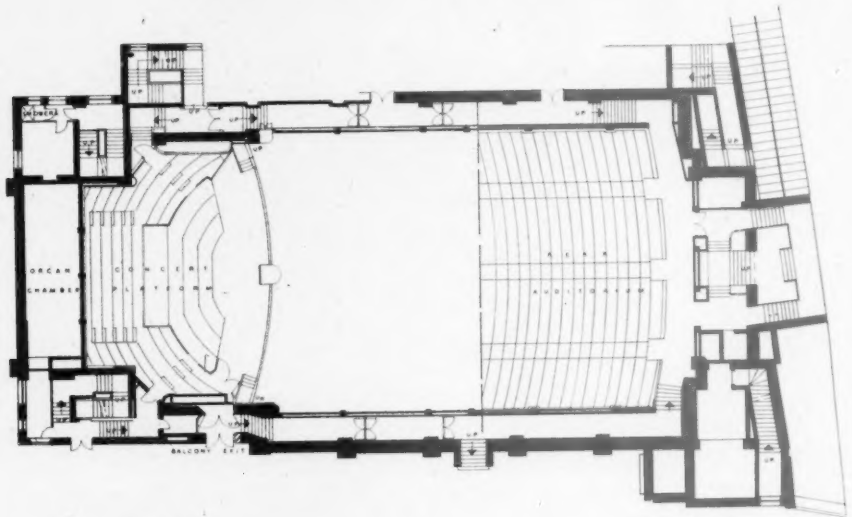
THE COLSTON HALL, BRISTOL

Continued from page 344

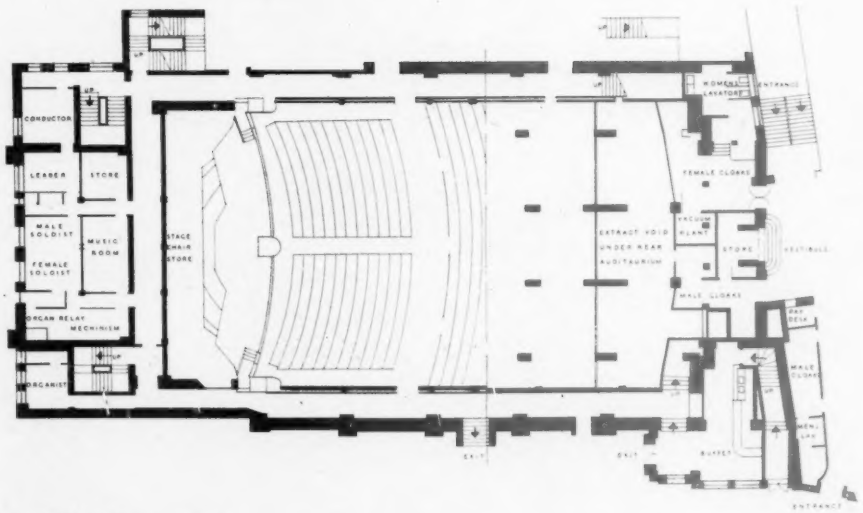
A special side entrance has been provided and an area allocated on the ground floor level of auditorium for invalids in chairs.

Ventilation is by intake and extract, the input being 50,000 cu ft per minute and the extract 45,000 cu ft. The fresh air intake is through a wood louvred frame in Colston Street yard at high level. This passes a battery of Kampak filter media and is drawn by multi-vane centrifugal fan to a battery on the flat roof and then to ceiling vents, vents in green room, under balcony ceiling and in hood. Extract is through grilles in steppings to balcony and mushroom vents in the auditorium steps. Recirculation is by fan to duct heading back to Plenum intake room. Heating is by

Continued on page 348

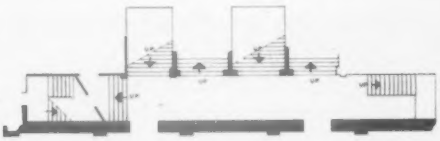


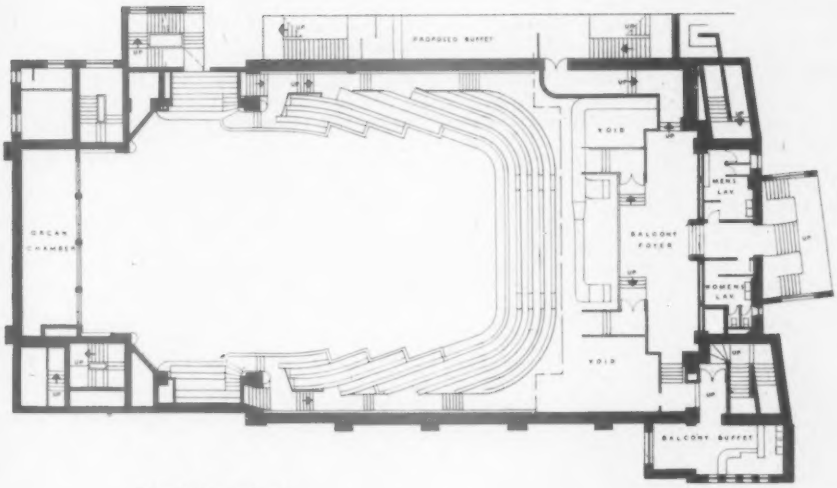
Rear Auditorium level



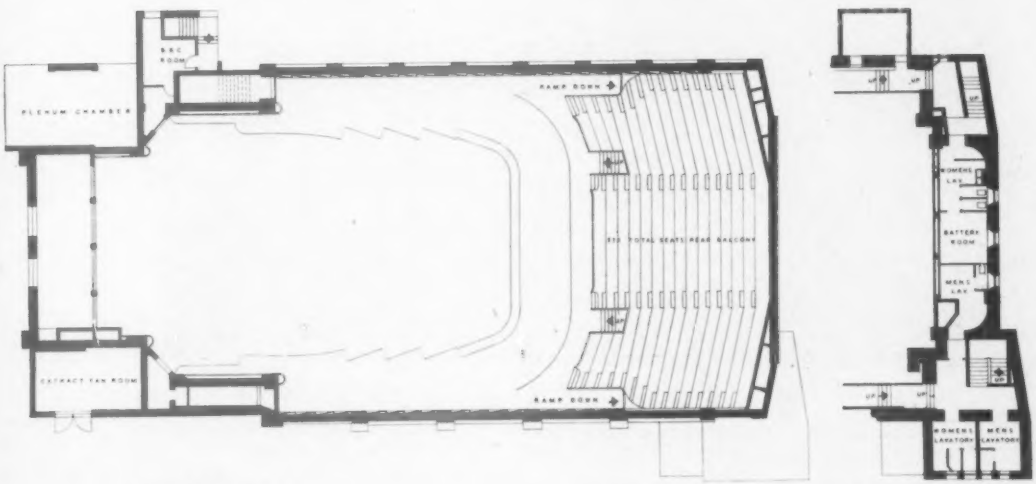
Front Auditorium level

architect: J. NELSON MEREDITH, F.R.I.B.A.



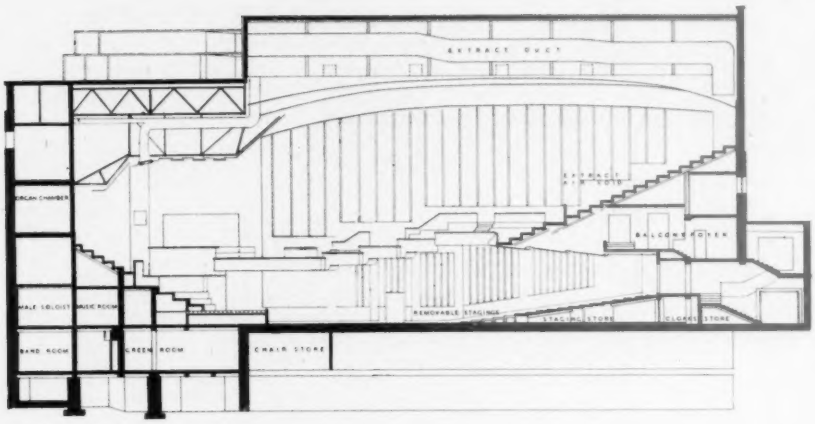


Front balcony level



Rear balcony level

THE COLSTON HALL, BRISTOL



SECTION

Exterior view of the hall

Continued from page 346

means of two auto stoker boilers in the basement. There are radiators and Vectairs in corridors, buffets and backstage rooms.

Work on the new hall commenced with demolition on April 20, 1950, and first occupation for a test concert took place 58 weeks later on June 5, 1951.

The acoustical advisers were the D.S.I.R. and the organ consultants were Dr. H. K. Andrews and Dr. W. K. Stanton.

quantity surveyors :
DAVIS, BELFIELD & EVEREST

GENERAL CONTRACTOR : WM. COWLIN & SON, LTD.

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Carpet in Conductors' Room :	Baileys (Bristol), Ltd.

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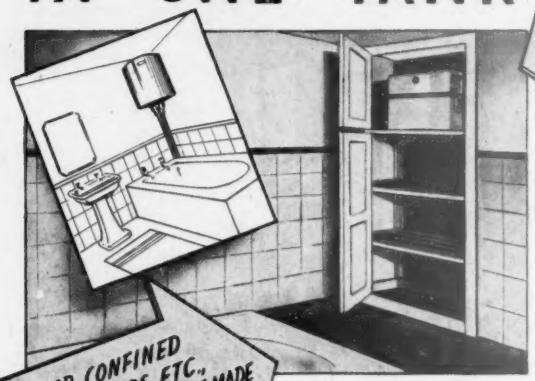

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M.A.C. Engineering (Bristol).
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The Brightside Foundry and Engineering Co., Ltd.
Lighting Fittings:
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Plaster Work:
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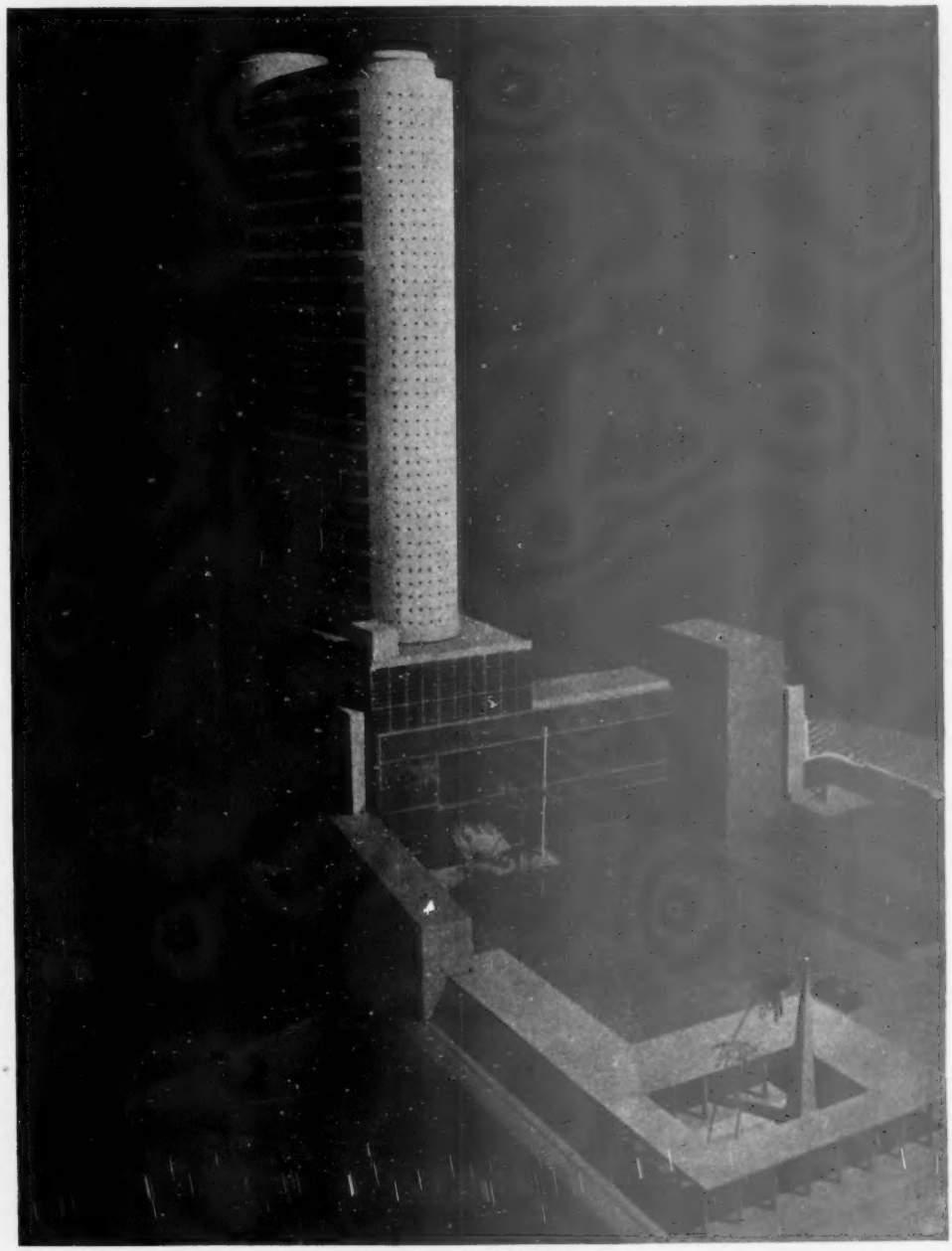
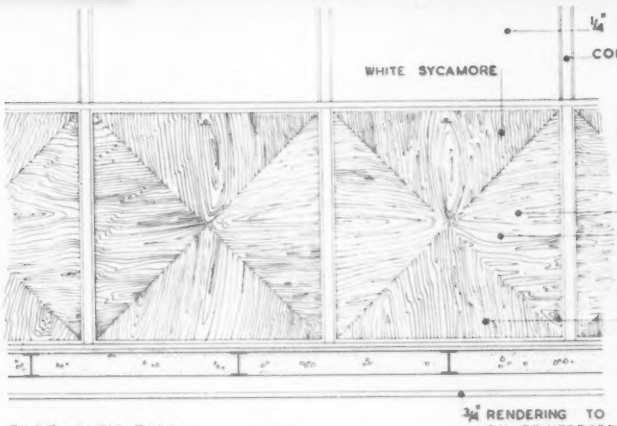
THE COLSTON HALL BRISTOL

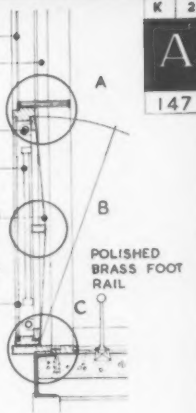
The roof is insulated with "Marlith" 3in wood wool slabs with "Trofsec" asbestos cement covering. The coved wood-wool slabs at wall and ceiling junction have a 5ft radius. The whole of the auditorium ceiling has ½in Vermiculite concrete covering.



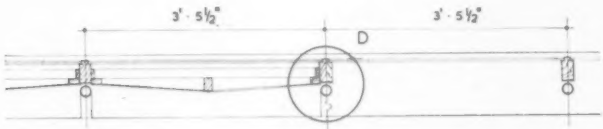
THE model for the reconstruction of the Quai Stalingrad at Toulon shows a 27-storey skyscraper streamlined to avoid the full force of the mistral. The building is to be divided into three parts. The bottom six floors will be used as a town hall, the ground floor being kept free for parking and the mezzanine planned as a shopping centre. The top six floors will be used as a hotel and the intermediate floors will be let as apartments. The architect for the scheme is M. Jean de Mailly. The building is now under construction.



PART ELEVATION • INTERIOR

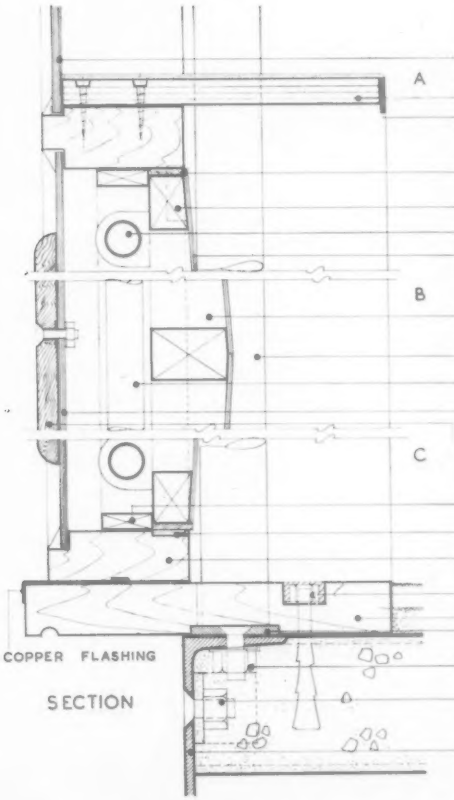


SECTION



PART PLAN • BELOW SILL • ABOVE SILL

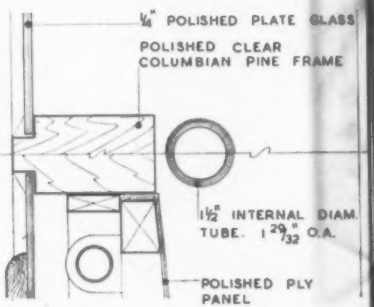
SCALE ½" TO ONE FOOT



SECTION

¼" PLATE GLASS
1/8" BLACK PLASTIC ON ¾" PLY CORE SILL
⅛" POLISHED BRASS NOSEING
3/16" EBONY COVER STRIP
ROLLER CATCH
FLUORESCENT TUBE
POLISHED PLY REMOVABLE LIGHTING PANEL
INSIDE OF PANELS PAINTED WHITE
1½" TUBE PAINTED
FLUORESCENT TUBE
BOREALIS GLASS
5/16" CELLULOSED HARDWOOD LETTERING
½" X 1½" STOP
BRASS HINGE FOR PANELS
CLEAR COLUMBIAN PINE FRAME
RAG BOLT COUNTER SUNK & STOPPED
SILL IN TEAK SUBSTITUTE
PLATE TO COLUMN
COUNTERSUNK BOLT HOLDING DOWN COLUMN
COUNTERSUNK BOLT CLEATED TO R.S.J.
7" X 3" CHANNEL

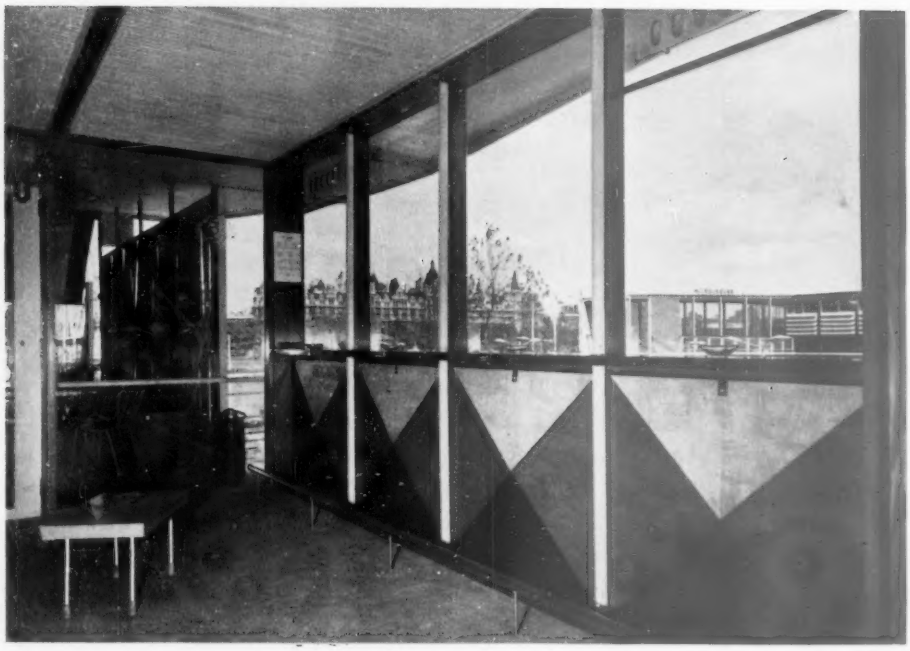
PLAN ABOVE SILL



PLAN BELOW SILL D

QUARTER FULL SIZE DETAILS

COFFERED WALL PANEL. '51 BAR . SOUTH BANK EXHIBITION 1951 • LEONARD MANASSEH



COFFERED WALL PANEL: '51 BAR F.O.B. SOUTH BANK
ARCHITECT: LEONARD MANASSEH

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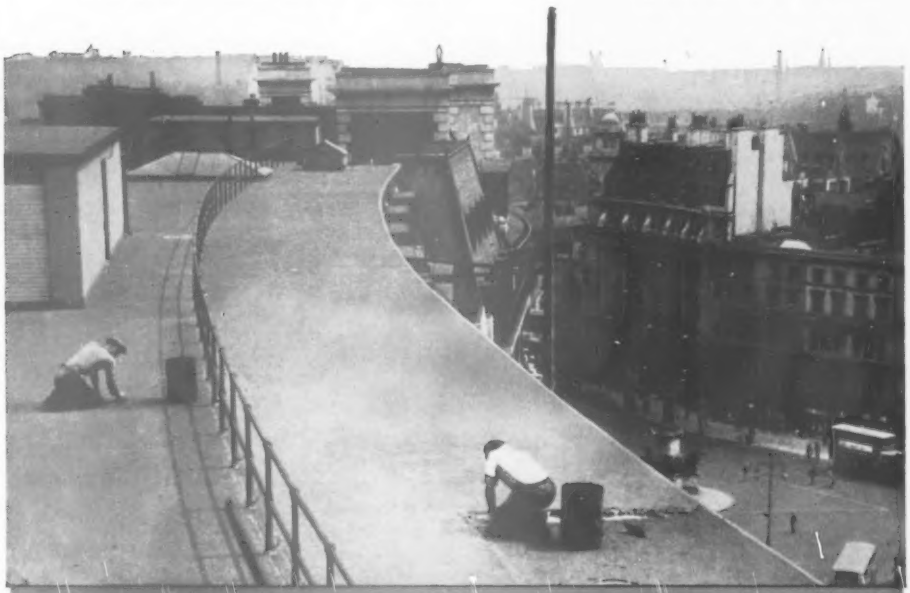
FELT ROOFING

GLAZED ROOFING

ZINC ROOFING



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Consulting Engineer:
Felix J. Samuely, B.Sc. (Eng) Lond., A.M.I.C.E., M.I.Struct.E., F.I.A.S., M.I.W.

We announce with pleasure the recent completion of this important contribution to the Lansbury Area, Poplar.

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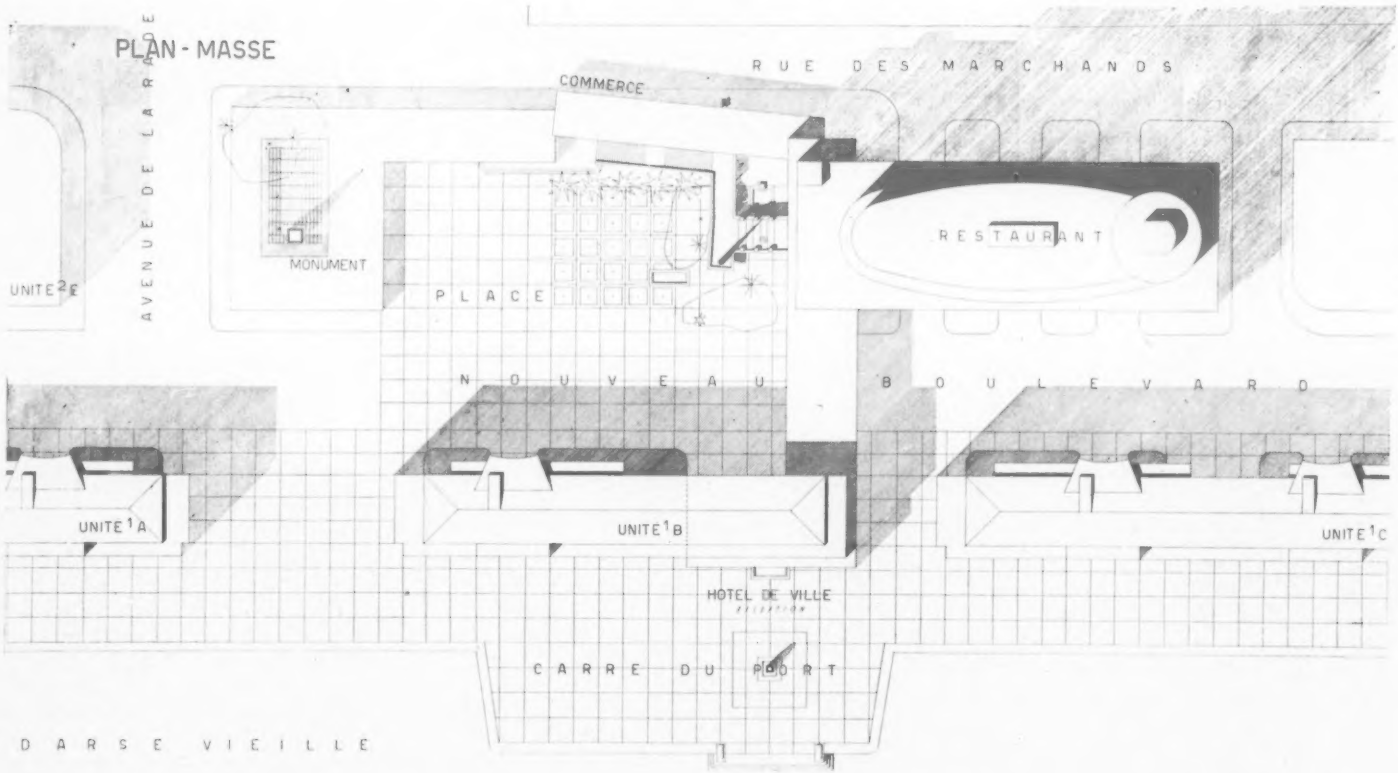


PROJECT FOR RECONSTRUCTION IN TOULON

architect: Jean de Mailly

THE PLACE OF SCIENCE IN THE BUILDING INDUSTRY, AND THE USE MADE OF ITS RESULTS

Extracts from the paper read by SIR BEN LOCKSPEISER, Secretary to the D.S.I.R., at the closing session of the Building Science Congress on September 20 at the Royal Festival Hall.

THE occasion of a Congress such as this underlines the social and economic importance of building in all its aspects. The way people are housed and the conditions under which they work in factories and offices has a far deeper social significance than is generally realized.

Economically, too, building is a matter of major importance in every country. In terms of investment capital, buildings and constructional work generally account for roughly 60 per cent of the total national gross fixed investments in this country. We are dealing with large slices of the national resources and heavy social responsibilities, and it is against this economic and social background that I would like to review, in a broad way, the contribution of research to building.

This is not an easy thing to do. The subject matter is very wide as the scope of the papers that have been discussed at this Congress makes abundantly clear. And the sciences that now serve building are very diverse in character. This is a very recent growth. The craft of building stretches back to very early days in the history of civilised man, and for many centuries existed and progressed by handing down from generation to generation improvements in craftsmanship that must have been early won. Building, like other traditional industries, fought its way through, and man exists to-day in civilized communities because of the patience, tenacity and persistance of its early craftsmen. It owed nothing to science, as we understand the term, for there was none to turn to, and it is only yesterday, as it were, that science began to take a hand.

We had first to catch up and apply the power of the scientific method to the study of materials and methods of construction. The physicist, the chemist and the engineer found a wide scope and progress only widened the scientific horizon. The economist joined hands with the technologist and the mathematician learned how to subject the manifold problems of building operations to statistical analysis. Questions of comfort, lighting and ventilation in our homes and factories aroused the sociologist and the specialist in industrial health. The study of soil mechanics made us look to our foundations and the scientist took care to see that we do not unduly pollute our rivers with sewage and wastes from our houses and factories. We have not only caught up, we are many lengths ahead.

During this exciting period which has not lasted substantially for more than thirty years, we have learnt much from the industry and they have learnt a good deal from us. Improvements in the common materials of building and in components, and a further understanding of their proper use, have influenced design, construction and maintenance. Much has been added to the store of knowledge at the disposal of industry to provide design data on structures and foundations, and erection processes for constructors.

These benefits are real enough, but there is an uneasy feeling that *building*, which for so long had nothing to learn from science and engineering, *is now, to one degree or another, unwilling or unable to learn*. Standards of efficiency in the building industry, as in many others, are, of course, very uneven. A relatively few very large firms know well enough the kind of world they are living in, apply modern industrial techniques and are ready and able enough to take advantage of the knowledge which comes from research. But *the general picture is one of relative stagnation*.

As Mr. Fitzmaurice said, "The general pattern of the industry has not changed in its essentials for a very long time."

The facts about productivity and costs in the building industry in this country are not in dispute. The Girdwood Committee estimated in 1950 that to build a given type of house, the man-hours needed in 1949 were 26 per cent above the level of 1938-39. Though this was an improvement on 1947, it still represented a 20 per cent drop in productivity compared with pre-war. For industry as a whole it is estimated that labour productivity has risen by 8 per cent since 1938. The trend of comparative costs is equally disturbing.

Small Use of Power

There is a close relationship between productivity and the use of machinery. The average American productive worker in the manufacturing industries uses rather more than three and a half times more electrical power than his British counterpart. This is not the only reason for higher American productivity, but it must surely be a very big one. *Advances in technology as often as not go hand in hand with increased horse-power. It is the machine which has turned scarcity into abundance*, and we may very well ask what use the building industry makes of machinery. Very little. The worker in the building and civil engineering industry had, in 1935, on an average, no more than half a horse-power at his elbow as compared with a national figure of 2½ horse-power for all manufacturing industries. Such evidence as exists to-day suggests that the ratio has since moved to the further disadvantage of the building industry. In building a pair of small semi-detached houses in this country much of the material is moved more than once, and we actually move some 1,200 tons of material mainly by hand. There is nothing so dear as cheap unskilled labour as every modern factory engineer knows. The average charge for machinery on a £1,300 house is under £30 against the labour cost of just over £400.

Many reasons are advanced for this primitive state of affairs. But all these reasons are, to my mind, symptoms, not causes. The real cause reaches down to the structure of the industry and a failure to realize that this structure, which is not peculiar in character to this country, carries with it certain implications if the building industry is to march with the scientific times.

The Industry Should Reorganize

This is an industry of predominantly small firms. In 1950 the total number of active registered firms was 128,564, of whom over a third were one-man firms.

Many of this multitude of small firms are, by modern standards, very inefficient. There is no inherent reason why this should be so, for size is not necessarily a criterion of efficiency. It depends on what the firm sets itself out to do and how it goes about it. If it tries to do on a small scale the same job as a large firm, it is almost certain to be wasteful in its use of labour. A firm building, say, twenty houses a year cannot command the capital to spend on many machines for such operations as digging foundations, transporting concrete and bricks, etc. And if it could, the machinery would be lying idle most of the time. The small firms could be efficient to the great benefit of the whole industry and the country if they were organized to undertake specialist activities as sub-contractors grouped regionally round the larger main contractors. The use of machinery on the site could then become economic. Even small sites could be serviced with machinery for digging foundations, for example, in much the same way as farmers call on tractors, reapers and combine harvesters which they cannot afford to own themselves.

The creation of conditions which enable more horse-power to be put behind the operative is not only desirable within the present pattern of building operations, but perhaps more important still, opens up the possibility of taking advantages of shop-fabricated components either in the factory or on the development site, which, as Mr. Christenson has told us, is the trend of events in building in the U.S.A. A technological advance of this nature

(*Continued on p. 358*).

News of the BUILDING INDUSTRY

THE BUILDING INDUSTRY is getting the blame for what Mr. David Gammans, M.P., called a "social scandal" in a speech to the National Council of Building Material Producers recently. The "scandal" is the rate of house-building for which the main responsibility "is on the Government."

"You have done precious little to defend yourselves," said Mr. Gammans. "If you really believe that you could build the 350,000 houses a year which you did before the war if conditions were different, why do you not have the courage to say so? Why is it that no association of builders has publicly supported the modest Conservative promise of 300,000 houses as being a practical proposition? Why do you not state openly the conditions under which you could not only reach your pre-war target but, with all the more modern appliances now at your disposal, exceed it?"

*

A PROPOSED INCREASE in the carriage rates of cement, which would seriously affect the house-building programme, has been suggested by the Road Haulage Executive to the Blue Circle Group of cement companies, comprising 80 per cent of Britain's cement firms.

Present charges for the carriage of cement by road are based on a standard rate agreed, before transport nationalization, by all cement firms in the Group.

Now the R.H.E. claims that the rates are low and seeks to increase them. Road transport is used for 95 per cent of cement haulage because it gives site-to-site delivery.

Negotiations are expected to begin in three months' time. If agreement is not reached then, the cement companies may ban nationalized transport and extend their own lorry fleets.

*

WINTER LECTURES and discussions on subjects of interest to the Building Industry arranged by the M.O.W. in the Regions start in October. Lectures in the first week are: "Essentials of Good Concreting" at Newport, Monmouthshire, at 7 p.m., Oct. 2, in the Queens Hill Boys' High School, and at Merthyr Tydfil, Oct. 3. "Good Practice in Plumbing" at Wolverhampton at 7.15 p.m., Oct. 3, at Wulfruna Street Technical College.

*

AN INCREASE in the maximum prices of certain types of sanitary fireclay ware is authorized by the Minister of Works as from Wednesday, Sept. 12, 1951. The prices for sinks, wash tubs, tub and sink sets, standard lavatories and overlaps, 45lb Standard closets and drainage channels and foot baths have been increased by 2½ per cent. The price of all other ware (including heavy lavatories, urinals, school closets and hospital specialities) remain unchanged. The increase is wholly accounted for by increases in manufacturing costs and has been authorized following an application by the Trade Association.

*

THE SCOTTISH BRICK POSITION remains difficult. Record outputs have failed to overtake the demand. In some areas efforts have been made to put a ceiling on the price to be paid. Dundee has a ceiling of 165s but is now being asked to pay 260s for bricks brought from England. Here the Council agreed to accept the Department of Health recommendation to use alternative materials for interior walls. This may indicate that little help can be expected from Government sources as to how the present scarcity can be cured.

Amongst points raised by Dundee Council one is that the New Towns sponsored by the Government are alleged to be receiving preference at the expense of normal users. Current viewpoint is that neither bricks nor houses can be expected in any volume equal to demand for some considerable time to come.

*

A REVISION to take account of changes in the demand for some sizes, and the requirements of the Model Water Bye-laws, has been made of British Standard for Galvanized Mild Steel Cisterns, Tanks and Cylinders (B.S. 417:1951) which provides for cisterns, tanks and cylinders for domestic use for the storage of water supplies.

Adjustments have been made accordingly in the tables of dimensions, these have also necessitated changing the nomenclature to avoid confusion with previous issues. The ranges now provide for 21 sizes of cisterns, 8 sizes of tanks from 17 to 53 gallons actual capacity and 11 sizes of cylinders from 16 to 97 gallons actual capacity up to 1,000 gallons nominal capacity. Each size of tank and cylinder is available in three gradings, according to the pressure to which it is tested and the corresponding working head.

It is important to note that the figures for the nominal capacity of tanks and cylinders have been deleted in order to assist the purchaser in the selection of suitable sizes to conform to the requirements of water bye-laws, and nett actual capacities which are not subject to a minus tolerance, are now given.

Cisterns and tanks are no longer required to be supplied with holes for attachment of the pipes, except when so ordered. It is now permitted to use the same gauge of metal for both the side and the ends of cylinders.

*

INDUSTRIALISTS throughout the country will shortly be receiving from Board of Trade Regional Controllers a letter asking them to supply certain basic information about their premises.

By limiting the approach to firms occupying a floor space exceeding 5,000 sq ft, and omitting those industries which are already heavily committed to the rearmament programme, only about one-third of the industrialists throughout the country will be asked to complete a short questionnaire.

Industry can be assured that the information obtained by the Board of Trade through this appeal will be regarded as strictly confidential and only used for the purposes of the register which is being compiled by the Factory and Storage Premises (Defence Planning) Division of the Board of Trade, head of which is Sir Philip Warter.

*

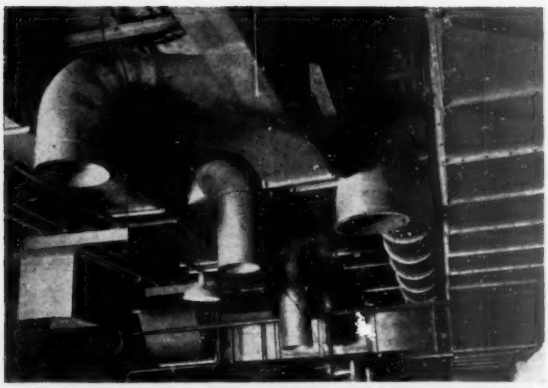
SUPPLIES OF VENESTA FINNISH BIRCH PLYWOOD are now beginning to arrive in this country under the Venesta grading of "Specnot," "Sumnot," "Mornot," etc.

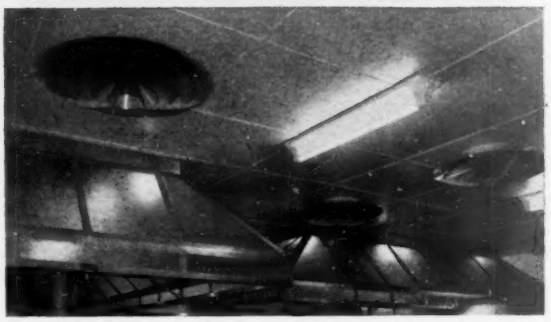
*

MR. H. C. REEVES, B.Sc.(Eng.), A.M.Inst.C.E., D.I.C., has been appointed Chief Fan Designer of Air Control Installations, Ltd.

(*Continued on page* 357)

The Ekco radio and television showroom at the Company's London Office in Vigo Street, W.1, has been re-designed and re-decorated. The new showroom was designed by Robin Day, A.R.C.A., F.S.I.A.





THE ROYAL FESTIVAL HALL

HEATING AND VENTILATION

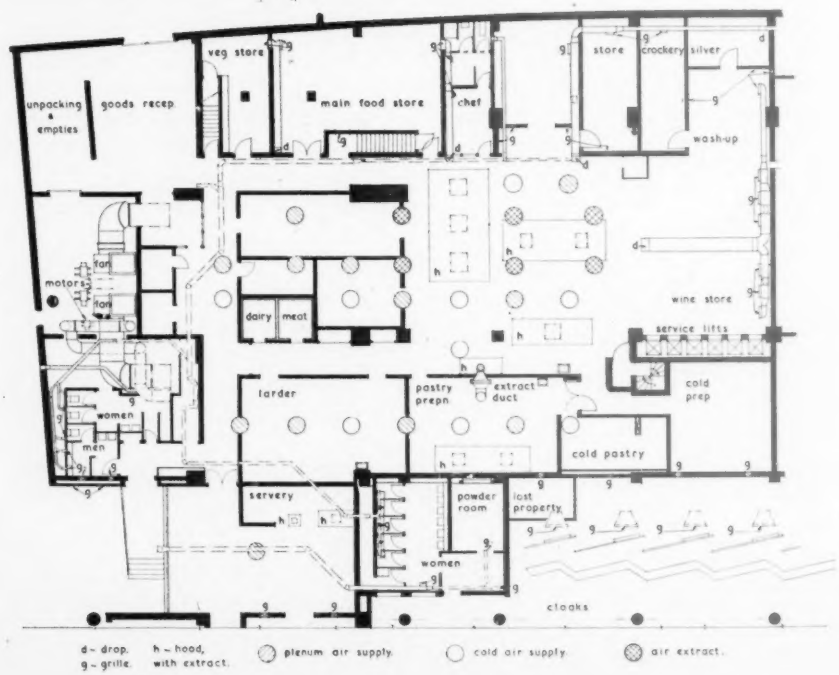
Designed by the L.C.C. Architects, Heating & Ventilation Section

Principal: R. Coe,
Assistant: R. J. Dickson, MM.I.H.V.E.

In Association with the Council's Chief Engineer

The plan below shows the disposition of inlet and extract positions in the kitchens in relation to the hoods over the cooking apparatus. It will be seen that air extracts are placed close to the main oven hood to receive any fumes or steam escaping round the side of the hood itself.

Left: above, the main trunking in the ceiling showing the branches to the ceiling inlets and extracts and, below, the finished ceiling showing two of the hoods and the special diffuser-type grille fittings which are used for inlet and extract.



GOOD, BAD OR INDIFFERENT?

No. 51.—By A. FOREMAN

Concrete Fences and Clothes-line Posts

AS I travel around the country I am seeing constantly concrete posts for various kinds of fencing which have failed. In some instances these failures have occurred sooner than in timber posts in close proximity. This seems to me to be unwarrantable. I am very pleased, therefore, to notice that the cast concrete industry has co-operated with B.S.I. to produce an appendix on this subject in the recently published parts of B.S.1722, which is a series of specifications for various types of fencing.

The concrete posts which failed are, I am afraid, often made by people who either do not know sufficient about the use of the material or do not take enough trouble to make them properly. Making concrete products may seem simple, but in my opinion the reverse is in fact the case if they are to be really satisfactory for a long life. The posts are often too slender and consequently have insufficient material in them. But often they also suffer from an insufficiency of reinforcement or perhaps more frequently the bad placing of reinforcement, so that there is inadequate concrete covering the reinforcement to protect the metal from corrosion.

The reinforcing bars should have at least ½in of cover at every part and should be so placed that there is proper cover where bolt or wire holes occur. For most posts the reinforcing bars, if of ordinary mild steel, ought not to be less than ¼in diameter and even more is desirable in straining posts. It is equally important to have proper stirrups of adequate diameter wire placed not too far apart.

Careful mixing of the concrete is of the greatest importance as is also the grading of the aggregates. Too large an aggregate will not only give a bad surface which collects the rain, but also gives a concrete which does not cover the reinforcement adequately. It is important that the water/cement ratio is kept low as this assists the post to resist frost action. The degree of compaction of the concrete is also important, but possibly not as important as adequate maturing before the product is put into use.

I am very pleased to see this particular series of British Standards as I think sound and authoritative guidance on fencing is long overdue. If the information as given is followed I look forward to seeing far less fencing failures of all kinds.

The same remarks apply also to other small sections of concrete products, such as clothes-line and lamp posts. Many people noticed the publication of British Standard 1373 for clothes-line posts in several materials and I heard many remarks that they thought it was a waste of time and energy to issue a standard for such an unimportant product. But on consideration I wonder if they have really thought how many clothes-line posts are put up every year and that quite a proportion fail within a relatively short time due to the use of inadequate materials or lack of sufficient precautions. These clothes-line posts are subjected to very considerable loading—for example, when a line carries a series of sheets or blankets in a high wind—and it is probable that many people do not know to what dimensions they should be made in the various materials. I feel therefore that the guidance contained in the Standard should be very helpful to those responsible, such as Local Authorities, for the purchasing and the maintenance of large numbers of these posts.

Concrete clothes-line posts if only 6ft 6in high from the ground to the position of attachment of the clothes-line need to be 3in square at the top and 5in square at the bottom, assuming a depth in the ground of about 2ft, and at least this amount is needed in most soils. To carry a load from a normal length clothes-line a good grade of concrete is essential, that is to say, one which has a cube strength in the region of 3,500lb per sq in after 28 days and a reinforcement of four 5/16in diameter bars with stirrups about every 12in. The cover of concrete over the bars should be ⅜in or ½in. It is important that, as for fence posts, the concrete should have a low water cement ratio and that it should be really well compacted in the mould, preferably by vibration or some similar process. The aggregate should be such as will pass through a sieve with meshes not exceeding ½in square, otherwise the covering of the reinforcement will be inadequate.

While talking of clothes-posts I have seen in the course of years many failures of steel posts due to the use of tubes of inadequate dimensions. They should be made from welded or seamless steel tubes of at least 9 S.W.G. and the outside diameter should be about 2in for posts standing out of the ground 6ft 6in to the point at which the line is attached. I think it is wise that the metal tubular posts have a capping of some type to keep out the rain and it is undoubtedly advantageous that they should be galvanized or at least given a good coating of red oxide primer after any rust and scale have been removed.

It has been customary in the past for many of these clothes-line posts to be made of timber and unless specially durable species are used I am sure that it is worth having these posts treated with a good water soluble type of preservative. It is best to avoid creosote as there is a risk of staining clothes.

HARDWOOD TIMBER SUPPLIES

With softwoods still strictly controlled by licence, there has been a tendency to seek fresh fields in the building trade for hardwoods. At first there was a wide substitution of hardwoods for softwoods in jobs which had been delayed for many years. Price appeared to be a secondary consideration.

Fortunately for the hardwood trade in Britain, this new freedom and increased demand coincided with greatly improved imports. The supply countries of the world welcomed back the British importer. Many changes were seen compared with pre-war days. Not only were prices about four times higher, but many new timbers were being introduced to the architectural profession. Hardwoods which before 1939 were commercially unusable, and were unknown outside the trade, were able to compete with other woods on the market. This could be accounted for quite simply: there just was not enough mahogany, teak, birch, beech and other pre-war favourites to meet the demand from the building trade.

The future is not so bright. The Korean war has made business with the Far East difficult; strife in Malaya has severely interrupted work in the forests; while in countries like France, there have been conservation policies which have reduced exports. The latest move in this direction comes from Thailand, where the Government have brought in regulations requiring export licences for all timbers other than teak.

Imports of hardwoods for the first six months of this year totalled 16,678 tons, compared with 19,093 tons in the same period of last year. The second half of the year is expected to show a sharper decline. When it comes to price, the rapid rise in values of hardwoods is clearly shown when it is realized that the imports for the first six months of this year cost £10,646,759, which was over £300,000 more than the cost of the much higher import in 1950.

This will give the architect some idea of the hardwood trend to expect. Prices of hardwoods coming into consumption are rising, and the supply is falling. Stocks of mahogany, ash and birch are falling rapidly, but in the case of ash and birch there is some licence control which will be used to ensure safety of stocks. Supplies of oak have not reached the level of last year, but there are expected to be slightly better quantities of English oak available following the increased felling quota which has now been agreed by the Forestry Commission.

French exports of poplar, beech and oak will be drastically reduced this year, and there has already been a long spell without shipments. Licences have now been issued by the French Government for the export of limited quantities of these species. Production in Africa has not developed as well as the trade had expected, and this will particularly affect mahogany exports. Added to this has been recent trouble over freight charges, for the increases from Africa this month have been quite exceptional. Some importers have eased their purchases from Africa in the belief that consumers will not be prepared to pay the much higher prices for some of the African timbers now being used.

Oak from the U.S. is being imported in appreciable quantities by the trade, but these imports cannot help the builders as the timber is being brought into the country on behalf of Timber Control for the purpose of replenishing the national stock and building up an emergency re-

serve. There is some expectation in the trade that this will be regarded by Timber Control as a first step towards allowing the hardwood importers to import on their own account from the U.S., and be able to sell the purchases free of licence. This is the main further freedom sought by the trade at present, and its advantages are being enhanced by the present falling imports. For the builder and architect, a supply of American oak, so popular before the war, would no doubt be widely welcomed. Supplies of oak received from the U.S. in the post-war period have been up to standard, and there is the added advantage that this timber has shown some weakening in price in the past few weeks.

Looking ahead six months, the builder and architect can expect that hardwoods generally will be more difficult to obtain, particularly mahogany, but this is not likely to apply to beech and teak. Many of the lesser-known hardwoods which have been used by the trade in the past year or two, such as afzelia, duku, krabaak, cangerana, etc. (to mention but a few), will be more difficult to find in the merchants' yards. Prices will be certain to increase, though in some cases the increase may be slight. Log prices have shown no fall, while freight and handling charges have been increasing of late.

TIMBER SHED AT SHOREHAM

This timber storage shed is the second to be built at the Kingston Wharf, Shoreham. The new shed differs in size and construction from its forerunner. The span of the new shed is 105 feet with an internal clearance height of 25ft over the central 80ft width of the building.

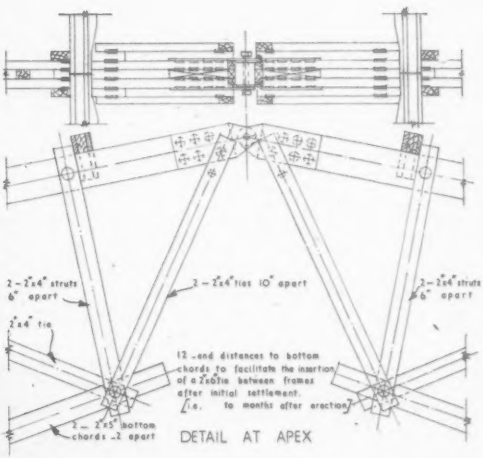
Half trusses were assembled on site jigs. These were then separated into two parts to simplify erection on the congested site. Each part of the truss was lifted into position with a 45ft pole and winch. Bolting up was done from a travelling scaffold. It is stated that the unsheeted trusses showed good stability in winds of gale force.

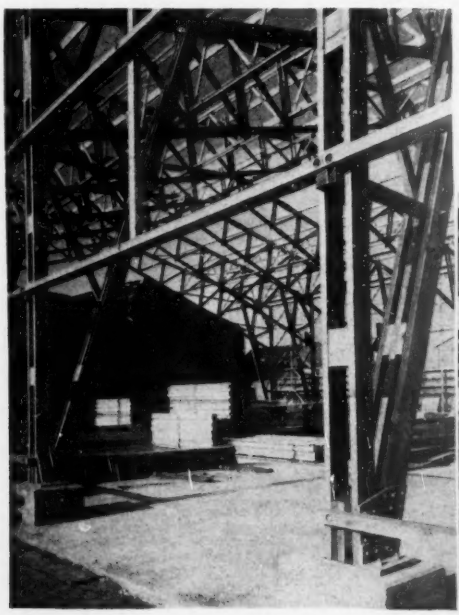
The comparative costs per foot cube were 2s. 6d. for the old building and 3s. 3d. for the new. It is of interest that while the consumption of timber in relation to enclosed space is virtually the same for both buildings the number of connectors used in the new shed is very much greater. This use of more connectors has economized in timber but is also largely responsible for the increased cost of the structure. In the old shed 55 per cent of the connectors were the split ring type. These are more expensive than single and double sided bulldogs, but the cost is offset by the greater work involved in pulling up joints to embed bulldogs.

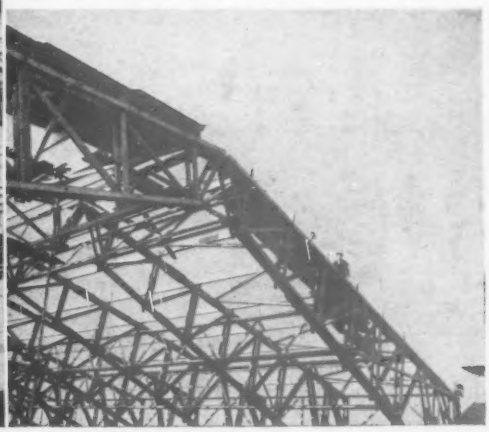
The Timber Development Association draws the following conclusions in comparing the two structures.

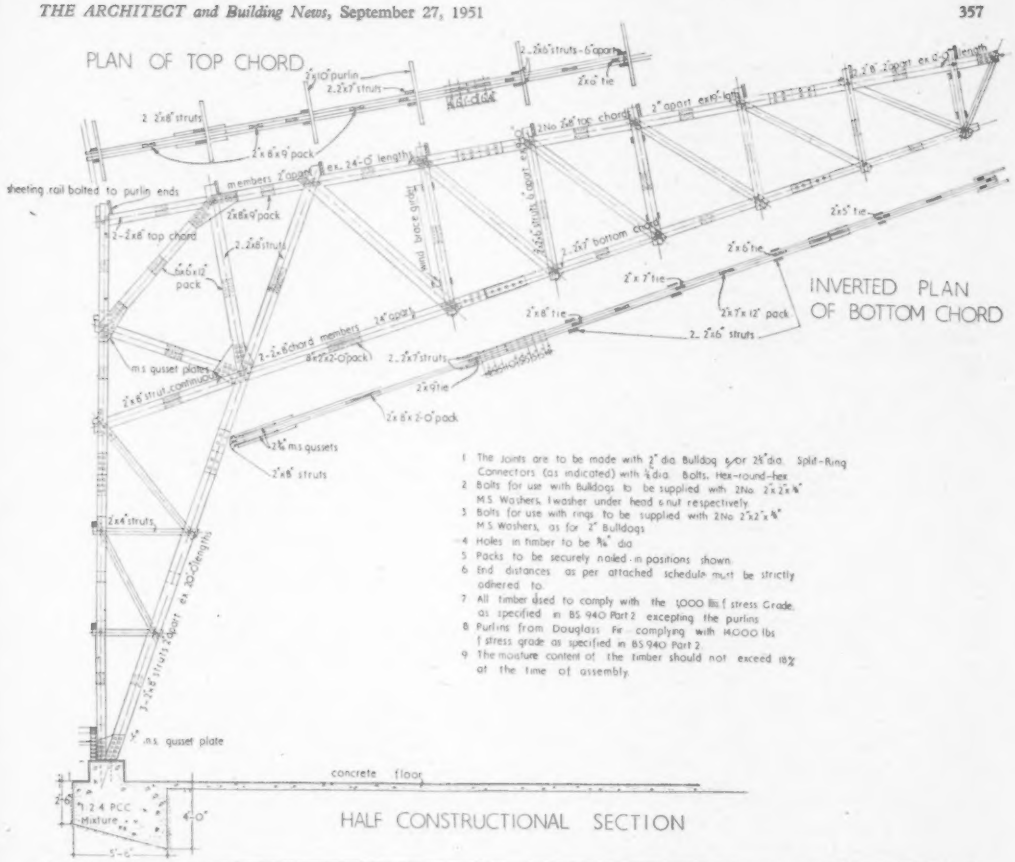
First, economy in the use of timber can be carried too far where it involves increases in the number and complexity of joints. Secondly, the need for similar analysis of building costs for broadly comparable timber structures is obvious. With a range of figures it would be possible to determine within limits certain optimum proportions, which would have great value as criteria of projected designs.

The finished new building fulfils precisely the requirements laid down, and, even if the cost of pioneering the application of research and design have this time been somewhat heavy, the owner's belief in timber structures remains undiminished.


2 – 2"x4" struts 6" apart
2 – 2"x6" ties 10" apart
2 – 2"x6" struts 6" apart
2"x4" tie
12 – end distances to bottom chords to facilitate the insertion of a 2"x6"tie between frames after initial settlement. (i.e. to months after erection)
2 – 2"x5" bottom chords – 2 apart
DETAIL AT APEX






PLAN OF TOP CHORD
INVERTED PLAN OF BOTTOM CHORD
HALF CONSTRUCTIONAL SECTION
sheeting rail bolted to purlin ends
concrete floor
1 2 4 PCC Mixture
1 The joints are to be made with 2" dia. Bulldog &/or 2⅝" dia. Split-Ring Connectors (as indicated) with ¾" dia. Bolts, Hex-round-hex
2 Bolts for use with Bulldogs to be supplied with 2No. 2"x2"x¼" M.S. Washers, 1 washer under head & nut respectively
3 Bolts for use with rings to be supplied with 2No 2"x2"x¾" M.S. Washers, as for 2" Bulldogs
4 Holes in timber to be ⅞" dia
5 Packs to be securely nailed in positions shown
6 End distances as per attached schedule must be strictly adhered to
7 All timber used to comply with the 1000 lbs f stress Grade, as specified in BS 940 Part 2 excepting the purlins
8 Purlins from Douglass Fir complying with 1400 lbs f stress grade as specified in BS 940 Part 2
9 The moisture content of the timber should not exceed 18% at the time of assembly

News of the BUILDING INDUSTRY *(Continued)*

H.R.H. THE DUKE OF EDINBURGH, K.G., F.R.S., has graciously accepted the office of President of the City and Guilds of London Institute for the Advancement of Technical Education to which he was duly elected at a Special General Meeting of the Members of the Institute on 21st September, 1951.

*

THE IRON AND STEEL CORPORATION OF GREAT BRITAIN announce that after a careful examination of the company structure of the important steel-works operating in South Wales they have decided to reconstitute the Boards of Guest Keen and Baldwins Iron and Steel Co., Ltd., and Guest Keen and Nettlefolds (South Wales), Ltd.

Guest Keen and Nettlefolds (South Wales), Ltd., was previously a wholly-owned subsidiary of Guest Keen and Nettlefolds, Ltd., and prior to nationalization it was "hived off" from the parent company. Under the Iron and Steel Act, Guest Keen and Baldwins Iron and Steel Co., Ltd., and Guest Keen and Nettlefolds (South Wales), Ltd., passed into public ownership.

The Directorate of both the companies were mainly nominees of Guest Keen and Nettlefolds, Ltd.

In the reconstitution of the boards of the two companies three part-time directors will retire from Guest Keen and Baldwins Iron and Steel Co., Ltd., and six part-time directors will retire from Guest Keen and Nettlefolds, (South Wales), Ltd.

All the full-time Executive Directors of both companies retain their appointments.

*

A PLASTIC TILE recently marketed by Messrs. Hornflowa, Limited, of Maryport, Cumberland, has been submitted to the B.R.S., who have made a report on its wearing properties. Results of tests show that this tile is a satisfactory flooring material for bathrooms, halls, bars and other places where colour and cleanliness are desirable.

Two new mottle colours are to be added to the existing range which comprises five plain and five mottled colours. Would-be users are recommended to make selection from sample. In common with many other products, the raw materials shortage makes it advisable to order in advance. The makers state that 35s per square yard laid is a reasonable basis for estimating cost on normal work. The firm's laboratories are at the disposal of customers for tests in connection with the effect of acids and methods of fixing to different types of sub-floor.

MESSRS. BOULTON AND PAUL, LIMITED, now have new offices at Riverside, Norwich. The new building, designed by J. Owen Bond & Son, was opened by the Mayor of Norwich on September 19.

*

MR. R. W. TAYLOR, A.M.I.E.E., takes up an appointment on October 1, 1951, with Crompton Parkinson, Ltd., as Product Sales Manager of the Nelson stud welding service.

*

PLYWOOD, laminboard, block-board and batten boards—excluding boards faced with materials other than wood veneers—are among goods which, from September 11, may be imported without individual licence from the usual "liberalization" list of soft currencies.

*

MR. WYNDHAM GOODDEN, at present Chief Officer of the Scottish Committee of the Council of Industrial Design, has been appointed director of the Rayon Industry Design Centre, No. 1, Upper Grosvenor Street, London, W.1, in succession to Mr. J. D. Lennon, who left in November, 1950, to take up private practice. Mr. Goodden expects to assume his new responsibilities at the Rayon Industry Design Centre shortly.

(*Continued from p. 352*).

lends itself to efficient job organization on the site to regulate the flow of processes as every up-to-date engineering manufacturing industry does. Further, it should become possible to combine the functions of design and production, and generally come much nearer to the approach and outlook of a modern industry.

Some of you may wonder why I, as a scientist, should devote so much of my time in this closing address of a Research Congress to industrial matters. I will tell you why. *Building research is in the main applied research and, unlike fundamental research, is undertaken solely for the economic and social benefits that can be got out of it.* We spend about half a million pounds a year on the Building Research Station in this country for the benefit of the community and industry, the value of whose annual output is of the order of £1,300 million, and there is no doubt that even in present circumstances this expenditure on building research brings a good return. But I do not doubt that the return might be many times more, and it is the business of the scientist to study the way science is used, or not used, to analyse industrial processes step by step, to distinguish between the wasteful and the efficient, and generally to relate human endeavour to economic and social advantages. Studies of this kind are known nowadays as operational research which, aided by the powerful methods of statistical mathematics has, in many industries, including building, shown the way to better organization, better management and a better use of existing resources. It is no substitute for laboratory research but is complementary to it, for it shows where science is most needed, and the conditions under which it could be applied. Scientists in private firms, Government laboratories and Research Associations are engaging in this kind of work in growing numbers. The Research Associations—organizations undertaking co-operative research for the whole of their respective industries—have been increasingly active in operational research during the past few years, and it is instructive to note in their reports, which cover industries of very different character, how great are the differences of efficiency in terms of productivity between firms making similar articles, under apparently similar conditions, in the same industry. The ratio between the best and the worst may be anything up to three to one, and the broad result emerges that if we could bring the worst firms only up to the level of the average for the industry, we could effect a general improvement of at least 10% without capital expenditure, but by more managerial foresight and better organization. This holds good for the building industry also.

Good management nowadays is bound to keep a sharp eye on what materials it uses and how it uses them. In building a house, for example, 58% of the cost is accounted for by materials and components. People the world over have been very prodigal in the use of materials of all kinds, and, in the face of rising demands, we have run into shortages in every country. In some cases, like lead, natural deposits which can be worked economically by present methods of extraction are coming to an end. We may have to give up using lead except in cases where nothing else will do. Lead piping is still used for conveying cold water and waste liquids in every kind of building. Plastic materials have been developed which can be shaped and threaded, and will keep their shape even when used with hot water. They can deal with corrosive liquids and carry food products without imparting a taint or colour. We must be prepared for replacements of this kind to conserve our dwindling supplies of scarce materials.

On the other hand, we cannot, in general, replace steel for constructional purposes, but if we knew more we could use less of it for the same purposes. Our factors of safety are, doubtless in many instances, a great deal too high, and will probably remain so until we learn more.

It is true that a building structure like any engineering structure should be considered as a single entity rather than as an assembly of separate components each having a large factor of safety against failure. But we are not yet able to treat building problems in structural engineering wholly in this way. The main reason for this is that the available materials of construction and the methods of processing and fabrication are not sufficiently uniform or controlled. There is no reason why they should not be, and we do well to devote a large experimental effort to the study of quality control of such a material as concrete. The problem of quality control of materials, and the possibilities of defining low but adequate factors of safety, should lead to great economies in the design of steel frameworks. This is a large and important field in which we could very well afford to increase our research effort and stimulate large-scale experiments.

All these matters have an obvious and important bearing on the subject of costs, and although there is plenty of room for further research, it would be misleading to suggest that the reduction of costs is waiting on new knowledge either from the laboratory or the operational research field. In 1949 the cost of primary schools averaged £195 per place. It has now been brought down to £140 per place in spite of the rise in prices during the last 18 months, by the kind of scientific study and application of principles I have already referred to.

Apart from the direct economic benefits, considerable advantages are derived from this approach because of the accuracy with which programmes over a period of years can be forecast in advance, the opportunities during the programme to improve design and reduce costs, and, especially, the ability to forecast reasonably well the financial and manpower commitments.

I believe also that a great deal, in the application of building research, now depends on the architect. He is the designer in the industry, and it is the designer in the engineering world who calls the tune. All design is a compromise. Whatever the project, be it ship, motor car, aeroplane or school, there are a host of competing requirements and a dozen different ways of striking a balance between them. Some are bad and some are good. The bad are usually based on plain ignorance and the good come from people who, not being specialists in all the branches of work, which together contribute to design, nevertheless have a sufficient understanding and knowledge of them all to enable a sound judgment to be formed. The engineering designer not only knows about the materials open to him to use, but he knows also the possibilities of new but untried materials. He knows the proved types of construction, but as he is always on the look-out for ways of saving material, he likes to satisfy himself that his factors of safety are not unduly high and that in matters of strength his structure is a consistent whole.

He is also continually aware of the fact that whatever he designs has to be made, and his design must conform, if he is to hold his own, with sound and economical production techniques. Have I said anything here which is not, or ought not to be, within the functions of the architect? Some architects feel that too much science has already made its way into what was once a straightforward craft of building, and that the mathematics of structural engineering are a bit too involved and that the scientists are probably wrong anyway, as they often are. Add to this the scientists' jargon and many a decent architect feels that the less he has to do with scientists the better. But he is living in the wrong century.

I am not, however, going to let the scientist get off scot-free. Some part of the blame for the unhappy architect rests with him.

I have spoken of good and bad design, but I want now to say a word about the best. Our standard of living comes from science and will be maintained by science. That is particularly true of this country, which must win and keep its place in the world's markets to import the food we live on and the raw materials we work on. *Machines can give us many things cheaply but we cannot get civilization on the cheap.* We have to keep a close watch on the machine, and only the artist can do it. We may deplore the architect who frowns on science, but it is the clever architect devoid of artistic sense who frightens me. *The best in design comes as much from vision and imagination as from calculated thought, and if we keep this balance true, what is called the age of the common man need not become the age of the commonplace.*

CONTRACT • NEWS •

Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ★ are given in the advertisement section.

OPEN

BUILDING

ASHTON-UNDER-LYNE B.C. (a) Structural and heating alterations to the Fire Station at Wellington Road. (b) Council's Architect, Municipal Offices, Wellington Road. (c) 3gns. (e) Oct. 12.

* * *

BARNET U.C. (a) 3-storey block of 21 flats and a 2-storey block of 12 flats at Oakmede site, Bells Hill. (b) Engineer and Surveyor, Municipal Offices, Wood Street. With details of available labour, previous contracts and names of two referees.

* * *

BEBINGTON B.C. (a) Contract No. 1. 40 houses, Mill Park Estate, Eastham. (b) Borough Engineer, Municipal Offices. (c) 2gns. (e) Oct. 15.

* * *

BOLTON B.C. (a) Slipper baths at Hennon Street. (b) Borough Engineer, Town Hall. (e) Oct. 15.

* * *

BOURNEMOUTH B.C. (a) Extensions to pavilion in Westover Road. (b) Borough Architect's Office (Room 101), Town Hall. (c) 2gns. (e) Oct. 6.

* * *

BRIGHOUSE B.C. (a) (Contract 23) 4 houses, (Contract 24) 2 blocks of 4 flats, (Contract 25) 5 shops with 3 flats above, (Contract 26) 16 houses, on Stoney Lane Estate, Lightcliffe, and (Contract 27) a block of 4 flats on Cain Lane Estate, Southowram. (b) Borough Engineer, Commercial Street. (c) 2gns (for Contract 25). (e) Oct. 19.

* * *

CARSHALTON U.C. (a) 9 shops and 11 flats at Site No. 25—The Mount. (b) Council's Clerk, Council Offices, The Grove. (d) Sept. 29, with particulars of works in hand or completed, plant and labour force available, and other details.

* * *

CHESTER R.C. (a) 12 houses at Barrow. (b) Council's Architect, 16, White Friars. (c) 3gns. (e) Oct. 8.

* * *

DERBY B.C. (a) Alterations and additions to "The Yews," Alvaston, to form aged persons' home. (b) Estates and Housing Director, The Council House. (c) 2gns. (e) Oct. 10.

* * *

DEWSBURY B.C. (a) Junior school at Thornhill. (All trades or separate trades). (b) Borough Architect's Office, Town Hall. (c) £3. (e) Oct. 9.

* * *

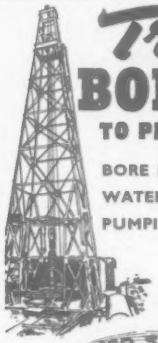
DONCASTER B.C. (a) Adaptation and additions to Rossington Hall. (b) Education Architect, Whitaker Street. (c) 2gns. (e) Oct. 12.

* * *

DRIFFIELD U.C. (a) 40 houses, Northfield Road Estate. (b) Council's Clerk, Council Offices, Eastgate South. (c) 3gns.

* * *

DURHAM C.C. (a) Provision of staff room, dining room and canteen scullery at Jarrow Bede Burn County School and dining room and scullery at Winlaton County School and conversion of art room to domestic science room at Billingham South Modern School and canteen scullery at Birtley East Modern School. (b) County Architect, Court Lane. (d) Sept. 29.



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DURHAM C.C. (a) 9 practical rooms and 13 classrooms in M.W. hutting at 15 schools. (b) County Architect, Court Lane. (d) Sept. 29.

* * *

DURHAM COUNTY POLICE AUTHORITY. (a) Conversion of former Guardians' Committee Offices into Police station, court, etc., at Lanchester. (b) Police Authority Architect, Court Lane. (d) Sept. 29.

* * *

GLOUCESTER, STROUD AND THE FOREST HOSPITAL MANAGEMENT COMMITTEE. (a) Nurses' home at Great Western Road, Gloucester. (b) Messrs. Dancey and Meredith, Bleak House, Station Road, Gloucester. (c) 2gns. (d) Sept. 22. (e) Oct. 19.

* * *

GODSTONE R.C. (a) 16 houses, or alternatively 26 at Careys Wood, Smallfield. (b) Engineer and Surveyor, Council Offices, Oxted. (c) 2gns. (e) Oct. 11.

* * *

HATFIELD DEVELOPMENT CORPORATION. (a) 52 houses. (b) General Manager, 4, Wigmores South, Welwyn Garden City, with details of similar work carried out and names of referees. Headed "Roe Green Estate, Area 'D,'" immediately.

* * *

HERTFORDSHIRE C.C. (a) Junior school and infants' school near Theobalds Farm, Boreham Wood. (b) County Architect, County Hall, Hertford. (d) Sept. 29.

* * *

HOLYWELL U.C. (a) 20 houses and 18 houses at Greenfield. (b) F. C. Roberts, Earl Chambers, Mold. (c) 3gns. Oct. 3.

* * *

LEWES B.C. (a) 14 houses, Church Lane Estate (North). (b) Bofough Engineer's Office, Council Offices, Fisher Street. (c) 5gns. (e) Nov. 22.

* * *

LINCOLN C.C. (a) Erection of (1) main block, brickwork and joinery shops at Grantham Technical College, (2) heating services and (3) electrical services. (b) County Architect, County Offices, Sleaford. (d) Oct. 10. (e) Nov. 9.

* * *

LINCOLN C.C. (a) District Nurse's house and garage at Rippingale. (b) County Architect, County Offices, Sleaford. (e) Oct. 12.

* * *

LONDON — BRENTFORD AND CHISWICK B.C. (a) 55 flats in 2 blocks at St. Thomas'. (b) Borough Engineer, Town Hall, W.4. (c) 5gns. (e) Oct. 29.

* * *

LONDON — BRENTFORD AND CHISWICK B.C. (a) 24 flats at Edensor Gardens. (b) Borough Engineer, Town Hall, W.4. (c) 5gns. (e) Oct. 22.

* * *

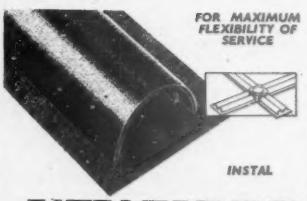
LONGBENTON U.C. (a) 16 houses, Ashleigh Grove, Benton. (b) Engineer and Surveyor, Council Offices, Forest Hall, Newcastle-on-Tyne. (c) 2gns. (e) Oct. 6.

* * *

MELTON MOWBRAY U.C. (a) 20 houses at Phase I of Dorothy Avenue site. (b) Engineer and Surveyor's office, Egerton Lodge. (c) 2gns. (e) Oct. 10.

* * *

NORTHERN IRELAND HOUSING TRUST. (a) 18 dwellings and ancillary works at Whitehead, Co. Antrim, and 18 dwellings with ancillary works at Castlerock, Co. Londonderry. (b) Trust Offices, 12, Hope Street, Belfast. (c) £3 each scheme. (e) Oct. 10.



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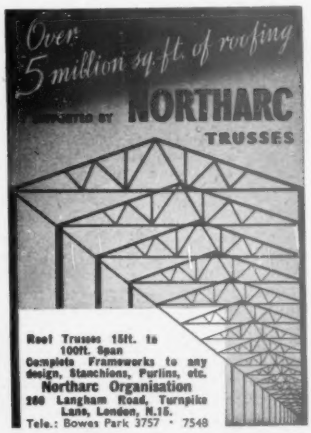
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N. IRELAND, BELFAST. (a) Additions and alterations to the Methodist College, Belfast, for the Board of Governors. (b) Messrs. Roe, Stevenson and Sons, 33, College Gardens, Belfast. (c) 5gns. (e) Oct. 12.

* * *

NORTON R.C. (a) 6 houses at Settrington. (b) Council's Architect, Council Offices, Welham Road, Norton, Malton. (c) 2gns. (e) Oct. 11.

* * *

NOTTINGHAM C.C. (a) Junior school at Askeby Drive, Strelley Estate. (b) City Engineer, Guildhall. (c) £2. (e) Oct. 9.

* * *

ROYSTON (HERTS) U.C. (a) 11 houses at Ermine Close. (b) Messrs. C. E. Ball and Partners, Dilke House, Malet Street, London, W.C.1. (c) 3gns. (d) Sept. 28.

* * *

SALFORD C.C. (a) Public convenience at Mandley Park, Higher Broughton, at corner of Great Cheetham Street East and Bristol Street. (b) City Engineer, Town Hall. (c) 1gn. (e) Oct. 15.

* * *

SCOTLAND, EDINBURGH C.C. (a) Alterations at Lady Yester's Church, Broughton. (b) City Architect, City Architect, City Chambers. (e) Oct. 8.

* * *

ST. HELENS B.C. (a) Contract No. 1989. 60 houses on Ashtons Green site, Derbyshire Hill Estate. (b) Borough Engineer, Town Hall. (c) 2gns. (e) Oct. 20.

* * *

ST. HELENS B.C. (a) Contract No. 1988. 50 houses on Broad Lane Section of East Lancashire Road Estate, Carr Mill. (b) Borough Engineer, Town Hall. (c) 2gns. (e) Oct. 20.

* * *

STRETFORD B.C. (a) 20 houses at Radstock Road site. (b) Borough Surveyor, Town Hall. (c) 2gns. (e) Oct. 20.

* * *

STROOD R.C. (a) 4 bungalows and 26 houses on Longfield Road site, Meopham. (b) Engineer and Surveyor, Council Offices, Frindsbury Hill. (c) 5gns. (e) Oct. 5.

* * *

SUFFOLK AND IPSWICH FIRE AUTHORITY. (a) Fire appliance room for new fire station at Debenham. (b) Authority's Architect, County Hall, Ipswich. (c) 2gns. (d) Oct. 8. (e) Oct. 26.

* * *

THURROCK U.C. (a) Branch library at Blackshots Lane, Little Thurrock. (b) Engineer and Surveyor, Council Offices, Palmer's Avenue, Grays. (c) 2gns. (e) Oct. 16.

* * *

THURROCK U.C. (a) Reconstruction of war-damaged part of Public Library at Civic Square, Tilbury. (b) Edward Fincham, 9, Palmer's Avenue, Grays. (c) 2gns. (d) Oct. 6. (e) Oct. 16.

* * *

WAKEFIELD C.C. (a) 114 houses on Kettlethorpe Estate. (b) Room 33, Town Hall. (e) Oct. 5.

* * *

WEST RIDING C.C. (a) Alterations and extensions to day nursery at Victoria Park, Keighley. (b) County Architect, "Bishopgarth," Westfield Road, Wakefield. (e) Oct. 8.

* * *

WEST RIDING C.C. (a) Adaptations to Divisional Police Headquarters at Pontefract. (b) County Architect, "Bishopgarth," Westfield Road, Wakefield. (e) Oct. 5.

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WEST RIDING C.C. (a) Additions to Heckmondwike Police Station. (b) County Architect, "Bishopgarth," Westfield Road, Wakefield. (e) Oct. 5.

* * *

WHITBY U.C. (a) 32 houses on Helredale Road site. (b) Messrs. Peacock and Bewlay, 224, Hagley Road, Edgbaston, Birmingham, 16. (c) 2gns. (d) Oct. 6.

* * *

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

BUILDING

CRAWLEY DEVELOPMENT CORPORATION. (1) 110 dwellings, 36 garages. (2) Northgate No. 7 site. (3) Y. J. Lovell and Son, Ltd., 10, Gildredge Road, Eastbourne. (4) £199,575.

* * *

NUNEATON. (1) Laboratories for Motor Industry Research Association. (3) W. J. Whittall and Son, Ltd., 132, Lancaster Street, Birmingham. (4) About £100,000. Architects: Clifford, Tee and Gale, 5, Buckingham Palace Gardens, Westminster, S.W.1.

* * *

YORK CITY COUNCIL. (1) 200 dwellings. (2) Askham Lane Estate. (3) F. Bilton, Ltd., Askham Lane, Acomb, York. (4) £270,640. (1) 220 houses. (2) Moor Lane Estate. (3) F. Bilton, Ltd., York. (4) £298,368.

* * *

BIRMINGHAM. (1) Block of offices and shops. (2) New Street. (3) Sir Robert McAlpine (Midlands), Ltd., 80, Park Lane, London, W.1. (4) About £250,000.

* * *

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* * *

KENSINGTON, S.W. (1) Additions. (2) Imperial College of Science and Technology, Prince Consort Road, S.W. (3) Higgs and Hill, Ltd., South Lambeth Road, S.W.8. (4) About £140,000.

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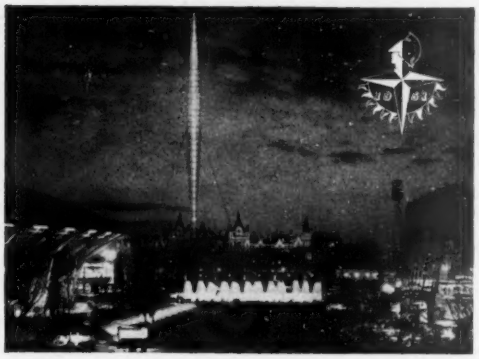

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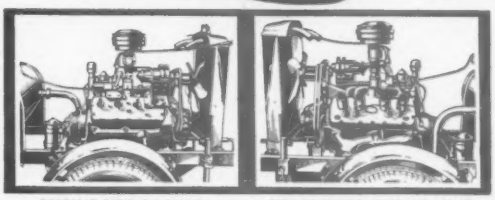

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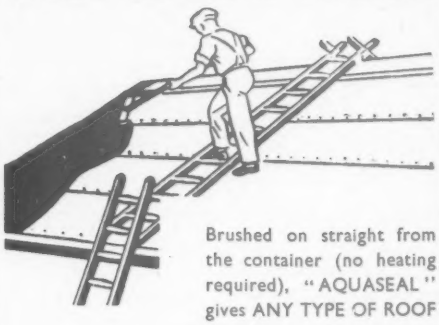

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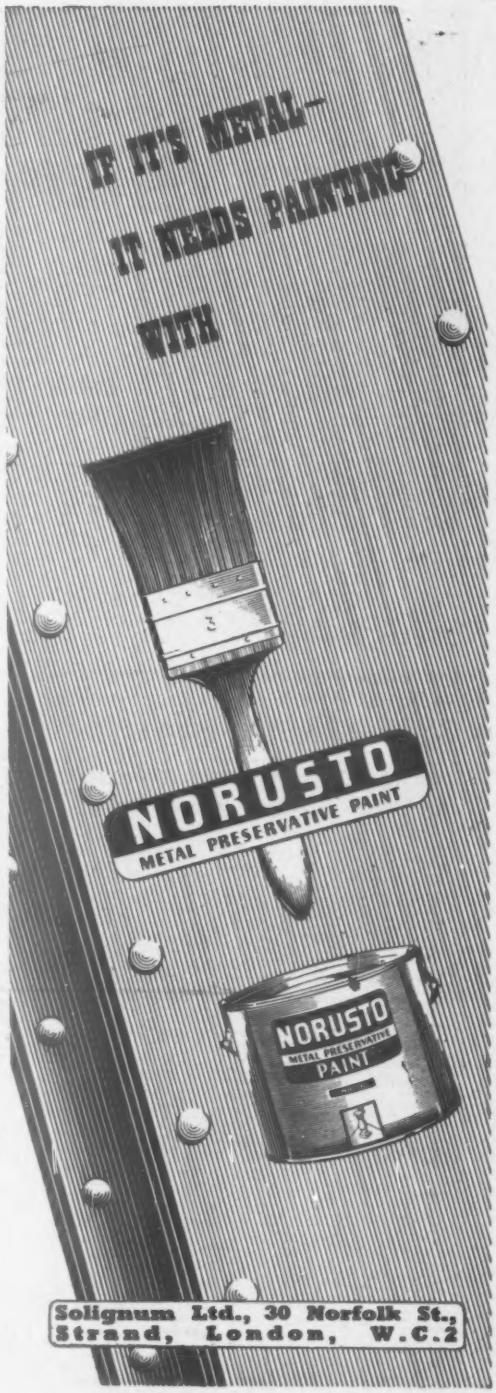

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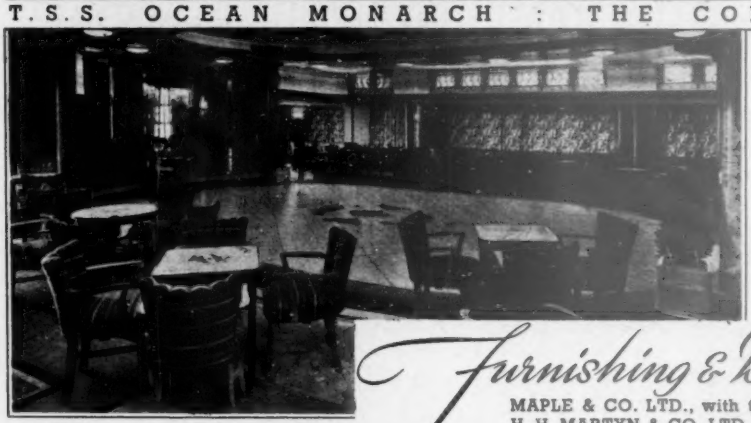

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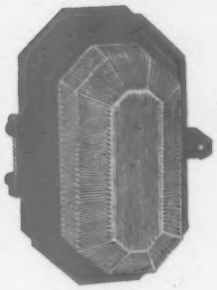

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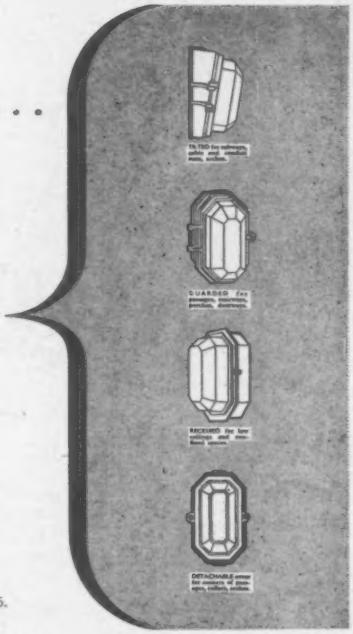

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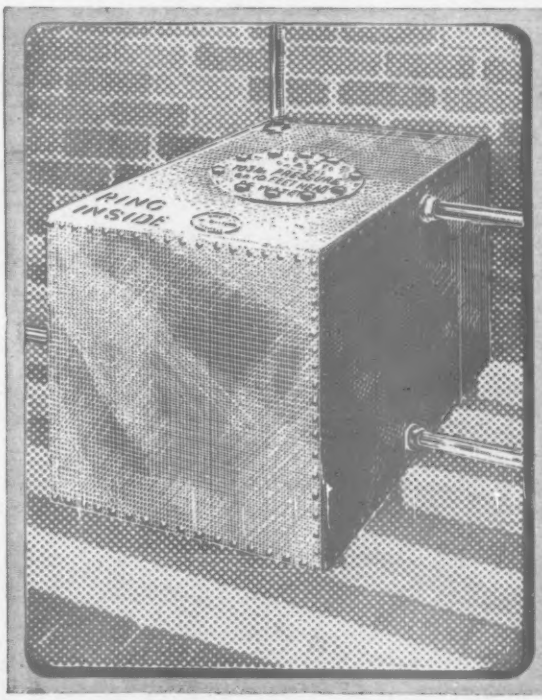

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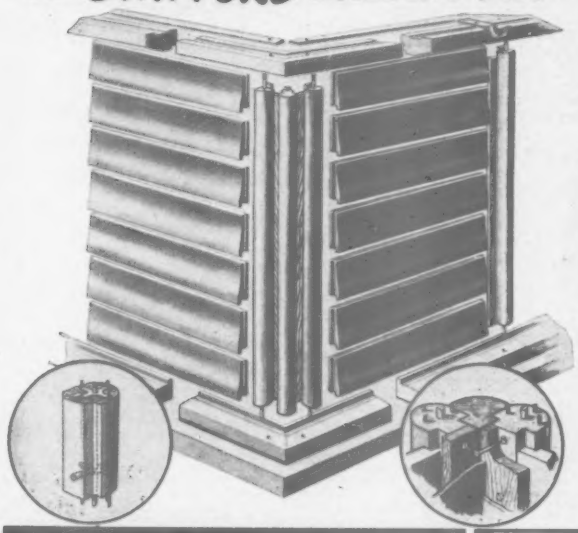

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APPOINTMENTS

CARDIGANSHIRE COUNTY PLANNING COMMITTEE

APPOINTMENT OF PLANNING ASSISTANT (GRADE VI)

APPLICATIONS are invited for the post of PLANNING ASSISTANT in the County Planning Department at a Salary in accordance with A.P.T. Grade VI (£645-£710).

Applicants should be Members or Associate Members of the T.P.I., preferably with complementary qualifications and should be experienced in the preparation of Development Plans and Planning Surveys and experience in the supervision of staff is essential.

The post is established, pensionable, subject to medical assessment and prescribed conditions. The Council cannot undertake to provide housing accommodation for the person appointed.

Applicants should give particulars of age, education, technical training, qualifications, experience, present salary, present and previous appointments, which, together with the names of two referees, must reach the undersigned not later than noon on SATURDAY, 6th OCTOBER, 1951.

J. E. R. CARSON,
Clerk of the County Council.

Cambrian Chambers,
ABERYSTWYTH. [5787

BOROUGH OF GRANTHAM.

APPOINTMENT OF CHIEF ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited for the above appointment in the department of the Borough Engineer and Surveyor at a salary in accordance with Grade VII A.P.T. (£685-£760) of the National Scheme of Conditions of Service.

Applicants must be Registered Architects and be capable of preparing and supervising schemes of construction—principally housing.

Previous experience with a local authority is desirable and the successful candidate will be required, under the supervision of the Borough Surveyor, to take charge of the planning and execution of the Council's housing programme.

The appointment is subject to the Local Government Superannuation Act, 1937 and the National Scheme of Conditions of Service, and will be terminable by one month's notice on either side.

Housing accommodation will be made available if necessary.

Applications stating age, qualifications, present and past employment and experience, together with the names of three persons to whom reference can be made, should be sent to Trevor J. Livesey, A.M.I.C.E., A.M.I.Struct.E., A.M.I.Mun.E., Borough Engineer and Surveyor, Guildhall, Grantham, to arrive not later than 10 a.m. on Tuesday, 2nd October, 1951.

John F. Gulle,
Town Clerk.

Guildhall,
Grantham. [5788

COUNTY BOROUGH OF DERBY EDUCATION COMMITTEE.

DERBY COLLEGE OF ART.

PRINCIPAL:
HOWARD BUCKLEY, A.R.C.A., A.T.D.

APPLICATIONS are invited from qualified Architects for the post of PART-TIME LECTURER, to take charge as soon as possible of the College's Part-time Architectural Course and to be responsible for the teaching of Architectural Design.

The Course is organised on a part-time basis in co-operation with the Derby Technical College for articled pupils and others who wish to obtain professional qualifications. At present students take a four-year course leading to the R.I.B.A. Intermediate Examination.

Applicants should have received their training in a full-time course at a School of Architecture and be interested in Design. It is anticipated that the time involved will be approximately eight hours per week, and the fee will be £1 1s per hour, plus travelling expenses. Applications (no special forms), stating age, qualifications and experience, should be sent immediately to the Principal, College of Art, Green-lane, Derby. [5813

APPOINTMENTS—contd.

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GENERAL BUILDING FOREMAN (M.28794.D) required for one tour of 12 to 24 months to take charge of restoration work in the French Domain in St. Helena. He will be engaged by, and be responsible to, the Vice-Consul of France. The work will include the restoration, to its original state, of Longwood Old House, the former residence of the exiled French Emperor, Napoleon Bonaparte. The more important part of the work consists of constructing exact replicas of existing joinery and re-roofing to original patterns. Fixed salary according to qualifications and experience between £650 and £750 a year. Free passage. Free quarters. Candidates should have served an apprenticeship as carpenter/joiner and subsequently have had good experience in high-class joinery and carpentry work. A good knowledge of bricklaying, plastering to a fine finish, decorating and other building trades is essential.

CARPENTER-JOINER (M.28795.D) required for a similar period to assist the General Building Foreman in the work described above. Fixed salary £500 a year. Free passage. Free quarters. Candidates should have served an apprenticeship with a firm of builders specialising in high-class work. They should be essentially craftsmen possessing their own tools. A sufficient knowledge of slating is required to be able to re-slate buildings with the assistance of local labour.

Reply at once by letter, stating age, full names in block letters, and full particulars of qualifications and experience, and mentioning this paper to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting the reference number against the appointment for which application is made, on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration. [5800

ISLE OF ELY COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

APPLICATIONS are invited for the undermentioned appointments on the staff of the County Architect:—

(a) FIRST ASSISTANT ARCHITECT. Grade A.P.T.VI (£645-£710 per annum).
(b) SECOND ASSISTANT ARCHITECT. Grade A.P.T.Va (£600-£660 per annum).
(c) JUNIOR ASSISTANT. Heating and Engineering Section. Salary in General Division, rising to £425 per annum at 30 years of age.

The appointments are permanent and are subject to the provisions of the National Scheme of Conditions of Service, the Local Government Superannuation Act, 1937, and to the passing of a medical examination.

Applications for (a) and (b) are to be made on forms of application obtainable from the County Architect, County Hall, March, and must be accompanied by copies of not less than two recent testimonials.

Applications for (c), stating age, education and experience, are to be made in the applicant's own handwriting and should be accompanied by copies of not less than two recent testimonials.

Applications for all posts must reach the County Architect not later than Monday, 15th October, 1951.

R. F. G. THURLOW,
Clerk of the County Council.

County Hall, March.
18th September, 1951. [5801

GLOUCESTERSHIRE EDUCATION COMMITTEE.

CHELTENHAM SCHOOL OF ART AND CRAFTS.

PRINCIPAL: R. STANLEY G. DENT, R.E., A.R.C.A., A.R.W.A.

REQUIRED to begin duties, if possible, in September, full-time STUDIO INSTRUCTOR in ARCHITECTURE. Candidates should be Associates of the R.I.B.A. The School is an R.I.B.A. "Listed" School. Salary, Burnham Scale B, £450 × £25 to £725, with graduate and training qualifications. Professional experience, National Service and previous teaching allowed for in fixing initial salary. Application forms and further particulars from the Principal and returnable within 14 days of this advertisement. [5802

APPOINTMENTS—contd.

LONDON COUNTY COUNCIL.

ARCHITECT'S DEPARTMENT.

APPLICATIONS are invited for positions of ARCHITECT, Grade III (£550-£700) and TECHNICAL ASSISTANT (up to £580) for architectural work on new housing, schools and other public buildings. The positions are superannuable and the above rates are subject to an addition of 10 per cent. on the first £600 and 7½ per cent. on any remainders.—Application forms from The Architect, The County Hall, S.E.1, enclosing stamped addressed foolscap envelope and quoting AR/EK/A. Canvassing disqualifies. (514.) [0106

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THERE are vacancies in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS and LEADING ARCHITECTURAL ASSISTANTS with recognised training and fair experience. Successful candidates will be employed in London and elsewhere on a wide variety of Public Buildings, including Atomic Energy and other Research Establishments, Telephone Exchanges, and Housing.

Salary: Architectural Assistants £340-£575 per annum, Leading Architectural Assistants £570-£675 per annum. Starting pay will be assessed according to age, qualifications and experience. These rates are for London; a small deduction is made in the Provinces.

Although these are not established posts, some of them have long term possibilities and competitions are held periodically to fill established vacancies.

Apply in writing, stating age, nationality, full details of experience, and locality preferred, to Chief Architect, Ministry of Works, Abell House, John Islip Street, London, S.W.1, quoting reference WG10/BS. [5763

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APPLICATIONS are invited for the post of SENIOR LECTURER in ARCHITECTURE, School of Architecture, New South Wales University of Technology, Sydney. Salary £A1,113-£A1,263 p.a. commensurate with qualifications and experience.

Applicants should possess a degree or diploma of a recognised University, preferably with Honours, and should have had appropriate professional and teaching experience and be prepared to undertake research in their special fields. The appointee will be required to lecture in Building Construction, Theory of Structures and Constructional Design. The normal academic year at the University of Technology consists of 41 weeks.

The appointee will be eligible, subject to medical examination, to contribute to the State Superannuation Fund which will provide an annual pension up to £A713 on existing salary.

The first-class ship fares of the appointee and his family to New South Wales will be allowed and the salary will commence when the appointee takes up his duty in New South Wales.

Six copies of applications, stating age, educational career, experience and other qualifications (also six copies of any supporting documents) should reach the Agent General for N.S.W., 56, Strand, London, W.C.2, not later than the 30th November, 1951. No special forms of application are available. [5807

BERKSHIRE COUNTY COUNCIL.

APPLICATIONS are invited for the appointment of TWO ASSISTANT ARCHITECTS on Salary Grade VI. £645-£710.

Candidates should have had good architectural training and be experienced in planning, design and construction. Preference will be given to Associates of the Royal Institution of British Architects.

Application forms and further particulars can be obtained from J. T. Castle, A.R.I.B.A., A.M.T.P.I., County Architect, Wilton House, Parkside Road, Reading, to whom they should be returned not later than Friday, the 12th October, 1951.

E. R. DAVIES,
Clerk of the Council.

Shire Hall,
Reading.
September, 1951. [5811

APPOINTMENTS—contd.

LONDON ELECTRICITY BOARD

SUB-AREA BUILDING SUPERINTENDENT

APPLICATIONS are invited for the above position in the Southern Sub-Area Construction Branch at Beckenham, Kent.

Applicants must have had an approved training in the Building Industry, and by subsequent experience be capable of preparing estimates and specifications, planning building construction work and supervising building work carried out by direct labour or under contract. The successful candidate will be responsible to the Sub-Area Construction Engineer for the supervision of general building work in connection with sub-stations in particular; also for general maintenance works in connection with all classes of building within the Sub-Area.

The post is graded under Schedule "A" of the National Joint Board agreement (17th February, 1950) as Class K, Grade 7, £825 6s per annum, rising to £863 13s per annum, inclusive of London Area Allowance.

Application forms obtainable from Establishments Officer, 46 New Broad St., E.C.2, to be returned duly completed within 7 days of receipt. Please enclose addressed envelope and quote ref. V/1325/AA on all correspondence. [5806

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APPLICATIONS are invited for the following post:—

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Intending candidates should apply in writing to the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith Street, S.W.1, giving brief details of their age, qualifications and experience. They should mention this paper and quote the reference number (27301/27). [5809

MIDLANDS ELECTRICITY BOARD

SOUTH STAFFS AND NORTH WORCS SUB-AREA

APPOINTMENT OF SENIOR DRAUGHTSMAN

APPLICATIONS are invited for the position of SENIOR DRAUGHTSMAN at Sub-Area Headquarters.

Applicants should have had a thorough technical training and practical experience in the preparation and design of building construction drawings. Possession of recognised qualifications will be considered an advantage.

Conditions of service will be in accordance with the National Joint Board Agreement for the Electricity Supply Industry and the salary will be in accordance with Schedule "D," Grade 5, £500-£600 per annum.

Applications, stating age, education, qualifications, experience, present position and salary, should be forwarded within fourteen days to: The Sub-Area Manager (Ref. C.W.), Midlands Electricity Board, Toll End Road, Tipton, Staffs.

A. STEPHENS,
SECRETARY.

14th September, 1951. [5804

CONTRACTS

COUNTY BOROUGH OF ST. HELENS.

CONTRACT No. 1989.

ERECTION OF 60 TRADITIONAL DWELLINGS.

THE St. Helens Corporation invite tenders for the ERECTION and COMPLETION of 60 HOUSES of Traditional construction, to be built on the Derbyshire Hill Housing Estate (Ashtons Green Site), St. Helens.

Bills of Quantities, Conditions of Contract, and Forms of Tender may be obtained from the undersigned on payment of £2/2, which will be returned on receipt of a bona-fide Tender. Working Drawings and details may be inspected at this office.

No Tender will be received except on the Tender Form and sealed in the endorsed envelope provided. Tenders must be delivered to the Town Clerk, Town Hall, St. Helens, not later than Saturday, October 20th, 1951.

The Corporation do not bind themselves to accept the lowest or any Tender.

M. WARD, M.I.MUN.E., A.M.T.P.I.,
Borough Engineer.

Town Hall,
ST. HELENS.
15th September, 1951. [5815

CONTRACTS—contd.

COUNTY BOROUGH OF ST. HELENS.

CONTRACT No. 1988.

ERECTION OF 50 TRADITIONAL DWELLINGS.

THE St. Helens Corporation invite tenders for the ERECTION and COMPLETION of 50 HOUSES built in blocks of four and six houses of Traditional construction, to be built on the East Lancashire Road Estate (Broad Lane Section), Carr Mill, St. Helens.

Bills of Quantities, Conditions of Contract, and Forms of Tender may be obtained from the undersigned on payment of £2/2, which will be returned on receipt of a bona-fide Tender. Working Drawings and details may be inspected at this office.

No Tender will be received except on the Tender Form and sealed in the endorsed envelope provided. Tenders must be delivered to the Town Clerk, Town Hall, St. Helens, not later than Saturday, October 20th, 1951.

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INSURANCE

ARCHITECT'S Indemnity Insurance effected.—Please write for Proposal Form to E. J. SAXBY, Incorporated Insurance Broker, 57a, Carfax, Horsham, Sussex. Tel. 990. [5668

OBITUARY

THE RUBEROID Co., Ltd., announce with very deep regret the death on 16th September of Mr. F. H. Nicholls, manager of the company's office in Birmingham. Mr. Nicholls, who joined the company in 1918, was well known in the Midlands throughout the building industry. By his extensive knowledge and likeable personality he had gained a wide circle of friends, by whom he will be sadly missed. [5799

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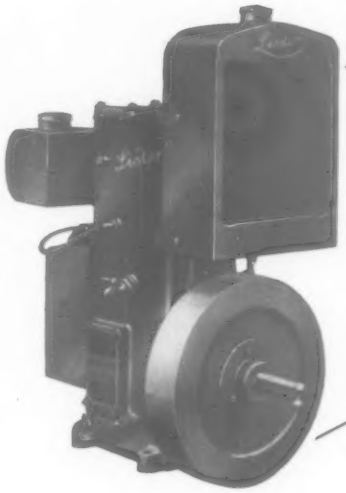

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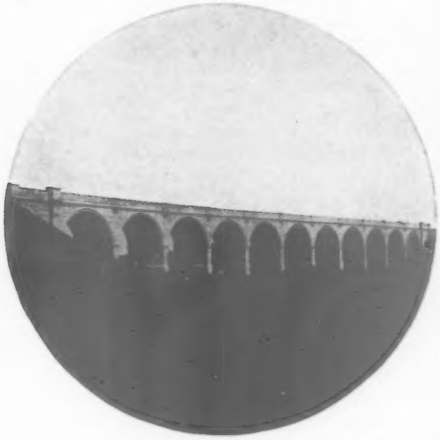

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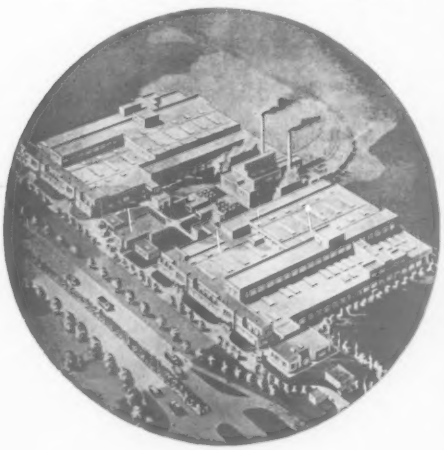
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